

# Research Development & Grant Writing News

Volume 5, Issue 6: February 15, 2015

## Table of Contents

- [Topics of Interest URLs](#)
- [The National Alliance for Broader Impacts](#)
- [NSF CBET CAREER Webinar Report](#)
- [The Perilous Transition: Idea to Implementation](#)
- [Materials Genome Initiative Strategic Plan](#)
- [Writing Proposals to USDA/NIFA/AFRI](#)
- [Research Grant Writing Web Resources](#)
- [Educational Grant Writing Web Resources](#)
- [Agency Research News](#)
- [Agency Reports, Workshops & Roadmaps](#)
- [New Funding Opportunities](#)
- [About Academic Research Funding Strategies](#)

## ARFS Dear Colleague Letter Winning an NSF CAREER Award

CAREER Workshops by Lucy Deckard

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## New CAREER e-book coming in March

*The NSF CAREER Proposal Workbook: A step-by-step guide to developing a competitive NSF CAREER proposal* by Lucy Deckard

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**Our New Faculty Guide eBook**  
[New Faculty Guide to Competing for Research Funding](#) [Table of Contents](#)

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## Research Development & Grant Writing News ©

Published monthly for faculty and research professionals by

[Academic Research Funding Strategies, LLC](#)  
[Mike Cronan](#) & [Lucy Deckard](#), co-Publishers

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Queries: [mjcronan@gmail.com](mailto:mjcronan@gmail.com)

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### About the co-publishers

[Mike Cronan, PE](#) (Texas 063512, inactive) has 23 years of experience developing and writing successful proposals at Texas A&M University. He was named a [Texas A&M University System Regents Fellow](#) (2001-2010) for developing and writing A&M System-wide grants funded at over \$100 million by NSF and other funding agencies. He developed and directed two research development and grant writing offices, one for Texas A&M's VPR and the other for the Texas Engineering Experiment Station (15 research divisions state-wide).

[Lucy Deckard](#) (BS/MS Materials) worked in research development and grant writing at Texas A&M University and across the A&M System for nine years. She directed A&M's [New Faculty Research Initiative \(2004-09\)](#), helping junior faculty System-wide jumpstart their research careers with federal agency funding. She served as associate director of two research development and grant writing offices. She founded [ARFS](#) in 2010.

### About the editor

[Katherine E. Kelly](#), Ph.D., is a retired English professor from Texas A&M University. She is the author of several books and numerous articles and served as a contributing editor for an academic journal for five years. She provides **editorial services** to [RD&GW News](#) and to [ARFS](#) clients on proposals, journal articles, and manuscripts.

# *Research Development & Grant Writing News*

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## **Dear Colleagues**

By [Lucy Deckard](#) ([Back to Page 1](#))

It's that time of year again when the thoughts of junior faculty turn to the NSF CAREER (or, at least, they should be thinking about their CAREER proposals by now!). We have scheduled our annual webinar on how to develop and write a competitive NSF CAREER proposal. We also offer in-person hands-on CAREER workshops and individual assistance. In addition, NSF is offering some directorate and division-specific workshops and webinars that your faculty may find helpful. Details and links are provided below.

### Academic Research Funding Strategies 2015 Webinar: How to Write a Winning NSF CAREER Proposal

**Date: March 24, 2015**

**Time: 2 pm - 4 pm Eastern Standard Time**

Webinar for faculty on how to write a successful proposal to NSF's [Faculty Early Career Development Program \(CAREER\)](#).

- How to decide when and if to apply for a CAREER grant
- How to position yourself and your research to be competitive for a CAREER
- How to structure your proposal
- How to develop an education plan
- Addressing diversity
- Keys to success and common mistakes to avoid
- A step-by-step discussion of each section of the proposal and what it needs to tell the reviewers
- How to analyze reviews and decide whether to revise and resubmit
- Questions and Answers
- A package will be also provided to participants that includes annotated excerpts from successful proposals and helpful resources.
- For more information and to register, go [here](#)  
[[http://online.krm.com/iebms/reg/reg\\_p1\\_form.aspx?oc=10&ct=00454079&eventid=22329](http://online.krm.com/iebms/reg/reg_p1_form.aspx?oc=10&ct=00454079&eventid=22329)] .
- Access to the webinar recording is also available.

#### Webinar FAQs

[[http://academicresearchgrants.com/yahoo\\_site\\_admin/assets/docs/Webinar\\_FAQ\\_2014.4291033.pdf](http://academicresearchgrants.com/yahoo_site_admin/assets/docs/Webinar_FAQ_2014.4291033.pdf)]

### In-Person Hands-on CAREER and Young Investigator Proposal Workshops facilitated by Academic Research Funding Strategies

These workshops cover the topics covered in the webinar but in addition focus on hands-on and interactive exercises, including:

- Talking to your Program Officer exercise
- Developing your project objectives

## Research Development & Grant Writing News

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- Diagramming your logical flow
- Outlining your Project Description
- Writing the first three paragraphs
- Participation in a mock review panel

They vary in length from ½ day to 2 days. These workshops are most appropriate for faculty who have a CAREER project in mind. Longer (2-day) workshops are most appropriate for faculty who have already applied and are revising and resubmitting. Individual consultations (typically 45 minutes each) are also offered as part of the workshop. Typical costs range from \$4,000 to \$6,500 depending on length of the workshop and travel expenses.

### Individual CAREER Proposal Assistance

Individual assistance is available for CAREER PIs. Several levels of assistance are offered. For more information and cost, please see our info sheet posted [here](#) [[http://academicresearchgrants.com/yahoo\\_site\\_admin/assets/docs/Estimates\\_for\\_CAREER\\_Assistance\\_2013.306122449.pdf](http://academicresearchgrants.com/yahoo_site_admin/assets/docs/Estimates_for_CAREER_Assistance_2013.306122449.pdf)] – we haven't updated the dates on this sheet yet, but the fees are the same.) Available slots fill up by May, so it's a good idea to contact us early if you're interested in this service.

### CISE 1-day Workshop

NSF's Computer & Information Science & Engineering Directorate ([CISE](#)) will host a day-long workshop on how to write CAREER proposals to that Directorate. The workshop will be held on March 16, 2015 in Arlington, VA, and the **deadline for registration is Feb. 20, 2015**. If any of your faculty are planning to submit a CAREER proposal to CISE, we strongly recommend they take advantage of this opportunity to learn not just about how to write an NSF CAREER proposal, but **also to get insight specific to CISE and what they are looking for in CAREER proposals**. More info [here](#).

### CBET CAREER Workshop

The Division of Chemical, Bioengineering, Environmental, and Transport Systems (CBET) held a 2-day CAREER proposal webinar last fall. It provided helpful insights to the inner workings of CBET and their expectations for CAREER, particularly in the Q&A sessions. Unfortunately, they don't seem to have posted the webinar slides or recording. (In our next newsletter, we'll provide a brief synopsis of interesting CBET-specific information provided.) However, they did post a video of a mock CAREER panel, which you can watch [here](#) [<http://www.nsf.gov/news/mmg/nsf.htm>] .

For more information, please see our website at <http://www.academicresearchgrants.com> or feel free to contact me: Lucy Deckard, *Academic Research Funding Strategies, LLC*  
979-693-0825 [[LDeckard@academicresearchgrants.com](mailto:LDeckard@academicresearchgrants.com);  
<http://www.academicresearchgrants.com>]

# *Research Development & Grant Writing News*

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## *Topics of Interest URLs*

(Back to [Page 1](#))

[The President's 2016 Budget: Agency Fact Sheets](#)

[National Alliance for Broader Impacts \(N4BI\) 3rd annual Broader Impacts Summit April 29-May 1, 2015](#)

[N4BI Broader Impacts Infrastructure Summit Report](#)

[National Science Foundation Research Traineeship \(NRT\) Program](#)

[Make the Match with NIH RePORTER](#)

[Tips for Applicants From the NIH Center for Scientific Review](#)

[Reaching Students: What Research Says About Effective Instruction in Undergraduate S&E Professional Formation of Engineers \(PFE: RIEF\) Research Initiation in Engineering Formation Fiscal Year 2015 Office of Naval Research Young Investigator Program \(YIP\)](#)

[AAAS Primer on Recent Trends in Federal R&D Budgets](#)

[Core Documents for the President's FY 2016 budget](#)

[AAAS R&D Budget Program](#)

[ScienceInsider](#)

[President's 2016 Budget Proposes Historic Investment to Combat Antibiotic-Resistant Bacteria to Protect Public Health](#)

[A Look at R&D Funding in the FY 2015 Omnibus](#)

[Additional Details on S&T Funding in the Omnibus](#)

[The Federal R&D Budget: Context, Overview, Outlook](#)

[Sea-Level Rise, Climate Change Impacts on Marine Ecosystems, and Geohazards Are Among Priorities for Ocean Science Over Next Decade](#)

[NIJ Research Report Digest, Issue 16](#)

[NIH's Dual Use Research of Concern \(DURC\) Expectations for Institutions](#)

[NIJ Current Funding Opportunities](#)

[USDA/NIFA Strategic Plan for 2014–2018](#)

[USDA/NIFA FAQ's on Logic Models](#)

[NIH Big Data to Knowledge \(BD2K\) Enhancing Diversity in Biomedical Data Science \(R25\)](#)

[New Steps to Enhance Transparency and Accountability at the National Science Foundation](#)

[Toward the next biofuel: Secrets of \*Fistulifera solaris\*](#)

[Frontiers of Engineering: Reports on Leading-Edge Engineering from the 2014 Symposium](#)

[New Ed.gov Homepage and More](#)

[Forecast of Funding Opportunities under the Department of Education Discretionary Grant Programs for Fiscal Year \(FY\) 2015](#)

[Topical Collaborations in Nuclear Theory](#)

[Computational Materials Sciences](#)

[Higher Education R&D Expenditures Resume Slow Growth in FY 2013](#)

[Higher Education Research and Development Survey, Fiscal Year 2013](#)

[State Government R&D Expenditures Remain Unchanged in FY 2013 at \\$1.8 Billion](#)

## *The National Alliance for Broader Impacts*

By [Dr. Susan D. Renoe](#), Director

Broader Impacts Network

University of Missouri

[\(Back to Page 1\)](#)

The National Alliance for Broader Impacts (NABI) is a community of practice focused on the development, implementation, and evaluation of science communication and public engagement programming—generally designed to meet the National Science Foundation’s (NSF) broader impacts criterion (BI). Although “broader impacts” as a term is specific to NSF, the idea of research relevance is not. Broader impacts can be viewed as the return on taxpayer’s investment in research. However, since NSF puts the most emphasis on broader impacts, most of the work of NABI currently falls under its purview, and it will be the focus of this article.

All research proposals submitted to the NSF are evaluated on their intellectual merit (scientific quality) and broader impact (benefit to society). A commonly held belief is that the broader impacts criterion entered the NSF review process in 1996. However, since 1952, when NSF first began awarding research funding, there have always been more worthy proposals than funds. So, “nontechnical issues” were used to select “from among the good proposals when the NSF’s budget allowed it to fund only a fraction of...proposals” (Rothenberg, 2010:294). However, by 1996, many reviewers ignored the broader impacts because of a “lack of understanding...among the reviewers” (Rothenberg, 2010: 297). As a result, the review criteria were simplified, clarified, and reduced from four to two: intellectual merit and broader impacts.

In 2010, Congress passed the America COMPETES Reauthorization Act (ACRA) that, among other things, refunded NSF and mandated BI as part of the review criteria. With ACRA, for the first time, formal responsibility for supporting BI activities was placed on the institution and not just the investigator. That same year, the National Science Board (NSB) conducted a study of the merit review criteria and found that stakeholders, including researchers and academic administrators, still did not understand how to address the broader impacts criterion (NSB, 2011:8).

In 2012, NSF Director Subra Suresh sent a letter to university presidents and grantee organizations ([NSF Notice 132](#)) explaining that ACRA “charged NSF to develop policies related to strategies and approaches employed to address the Broader Impacts criterion: assessment and evaluation; institutional engagement in assisting investigators with activities associated with addressing broader impacts; and training to ensure NSF staff, merit review panels, and potential NSF-supported investigators understand these new policies.” This framing of the requirements for successful implementation of the ACRA language (particularly the new emphasis on institutional engagement) helped to further galvanize the BI community by providing strategic legitimacy to many of the activities they were already engaged in.

In April of 2013, 80 BI professionals from more than 30 institutions met for the first time at the University of Missouri to talk about the challenges of providing BI support and to share

## *Research Development & Grant Writing News*

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promising practices for meeting those challenges. From that initial meeting, a critical mass of professionals was identified and a consensus emerged that a community should be formed.

The National Alliance for Broader Impacts ([NABI](#)) was formed in 2014 with support from the NSF ([MCB-1408736](#)). It currently includes more than 200 participants from 75 organizations. The goal of NABI is to create a community of practice that supports the development of institutional capacity and engagement in BI activity through the achievement of the following four objectives:

- 1) Identify and curate promising models, practices, and evaluation methods for the BI community;
- 2) Expand engagement in and support the development of high-quality BI activities by educating current and future faculty and researchers on effective BI practices;
- 3) Develop the human resources necessary for sustained growth and increased diversity of the BI community; and
- 4) Promote cross-institutional collaboration on and dissemination of BI programs, practices, models, materials, and resources.

NABI will promote BI activities locally, nationally, and internationally and help to advance the BI field within the academy. NABI will improve the quality and sustainability of BI investments, as researchers continue to create unique and effective BI activities that are sustainable beyond the life of their grants. This organization creates a national dissemination network for sharing ideas and promising practices and fostering collaboration opportunities that further strengthen the broader impacts proposed by the researchers served.

In order to provide professional development opportunities for BI support professionals, NABI hosts an annual Broader Impacts Summit, which features invited speakers and working sessions. **This year's Summit will be held in Madison, Wisconsin from April 29-May 1, 2015. Registration is open at [www.broaderimpacts.net](http://www.broaderimpacts.net).** In addition to the Summit, NABI hosts trainings for researchers and interested others on BI and provides consulting services for institutions who are interested in starting a BI office or who do not have the resources to fund a full-time office.

The Summit and membership in NABI is open to anyone who is interested in broader impacts in theory and in practice. The Alliance is committed to growing the BI support community and especially invites graduate students to participate in our events and trainings. There is no cost to join NABI. To join, fill out the membership form on our website [www.broaderimpacts.net](http://www.broaderimpacts.net).

## NSF CBET CAREER Webinar Report

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By Lucy Deckard, co-publisher

[\(Back to Page 1\)](#)

In October of last year, NSF's Division of Chemical, Bioengineering, Environmental, and Transport Systems ([CBET](#)), which is in the Engineering Directorate ([ENG](#)), hosted a 2-day Webinar on CAREER. They had initially planned to post webinar slides and a recording of the webinar, but they later sent out a notice that they had experienced some technical problems with the recording. Since the recording and slides still don't appear to be available, we decided to summarize our notes below. These Division-specific webinars and workshops are particularly valuable because they give insight into some of the differences between NSF Divisions and how they handle CAREER. If you're planning to apply to a program within CBET, it's helpful to understand those idiosyncrasies.

On a related note, NSF's Computer & Information Science & Engineering Directorate ([CISE](#)) will host a day-long in-person workshop on how to write CAREER proposals to that Directorate. The workshop will be held on March 16, 2015 in Arlington, VA, and the **deadline for registration is Feb. 20, 2015**. If you or any of your faculty are planning to submit a CAREER proposal to CISE, we strongly recommend they take advantage of this opportunity to learn not just about how to write an NSF CAREER proposal, but also to get insight specific to CISE and what they are looking for in CAREER proposals. More info [here](#).

### CBET Webinar Overview

The agenda for the CBET webinar is available [here](#). They first discussed the basics of the CAREER program. You can find much of that information in the [NSF Regional Grants conference CAREER presentation](#) and in the [NSF CAREER FAQs](#). However, they did make several interesting CBET-specific points:

- The success rate in CBET for core (unsolicited) proposals is usually 5 – 10%. In contrast, for CAREER they have set a target success rate of 15%. CBET received 38% of the CAREER submissions to ENG.
- Within ENG, the [Division of Electrical, Communications and Cyber Systems \(ECCS\)](#) has the highest success rate for CAREER proposals.
- Each year, 1 out of 4 awards from CBET go to first-time awardees (meaning they have not been previously funded by NSF).
- They have had a lot of proposals returned without review. Be sure to follow the [new Grant Proposal Guide](#) requirements for Results of Prior NSF Funding if you've had any NSF funding in the last 5 years!
- They said at the time that the new CAREER solicitation should be out by December or January (however, it's still not out), and that there won't be many changes.
- The goal for CBET is that all awards will be announced by Jan. 15<sup>th</sup>.

The presenters also made a number of more generally helpful points. A few of those are summarized below:



## *Research Development & Grant Writing News*

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- Propose a scientific/engineering problem that will be longer and deeper than the first 5 years. Where will you make your mark? This should provide a backbone for your career. Imagine where you want to be in 20 years. You need a vision: if you're given this award, what great things will happen in the world? Avoid the mistake of proposing just what you need to do to get out the next paper or two.
- Avoid the common mistake of proposing a topic that is too close to your former advisor's work.
- Not every project, especially in engineering, is hypothesis-driven, but you need clear research questions. The types of research questions depend on the discipline and program; some can be characterization-driven vs. discovery-driven.
- For the education component, be sure to leverage assessment expertise at your university.
- To increase the impact of your K-12 outreach activities, consider working with teachers instead of students, or work with trainers of teachers rather than teachers. The result is you'll impact more students.
- When addressing diversity, it's not enough just to say you have a high minority student population. You need a plan to attract, educate and mentor them in your project.
- Remember that if you win the CAREER, you can leverage that funding to win funding from other agencies, so you can use the CAREER to do the fundamentals.

The also went over the panel review process. A video of a mock review panel for the CAREER is posted [here](#). This is definitely worth viewing if you plan to submit a CAREER.

### **Other Resources**

[NSF CAREER program page](#)

[ARFS CAREER webinar](#) (focused more on the nitty gritty of planning and writing a CAREER proposal) and [webinar FAQs](#)



## The Perilous Transition: Idea to Implementation

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By [Mike Cronan](#), co-publisher

([Back to Page 1](#))

One of the more challenging transitions to make in writing the research narrative is to successfully traverse the “**Idea to Implementation**” transition, a path that leads from the general outline of an idea to the **stepwise specificity** of its realization. This challenging path is to research grant writing what crossing the often referenced “Valley of Death” is to transitioning from applied research to successful technology demonstration and commercialization. Estimates are that over 80% of the attempts at technology transition perish in the Valley of Death. It would not be unrealistic to estimate that a similar percentage of proposals submitted to federal agencies also perish in what might be called the “**Narrative Valley of Death**” wherein the “**Idea to Implementation**” transition fails to convince, leaving program officers and reviewers with insufficiently persuasive details and reasons to fund a proposed project.

Like the other key transition in a fundable research narrative—the transition from **Research Silos to Research Synergy**—the transition from **Idea to Implementation** has its origins in the key prerequisite of a funded proposal: a great idea that impresses the reviewers as both novel and of high impact, either to the agency mission or the field, or both. In the linear domain of the proposal narrative, you first describe your great idea to the reviewers, but at this point in the narrative, a great idea is **merely unrealized potential** waiting to be revealed, somewhat like the potential energy in an object, by the specificity and detail of a research plan for implementation.

For example, NASA has an idea to [send humans to Mars](#) in the 2030s. While this is a grand idea, its realization will be based on how convincing a case NASA can make that a **stepwise process for implementation** (International Space Station, Asteroid Redirect Mission, Space Launch Systems, Orbiters, Landers, etc.) has been sufficiently thought out to convince reviewers (President and Congress) to fund the project in the NASA budget. While this example is infinitely more ambitious and costly than ideas proposed in academic research proposals to federal agencies, the real difference is one of scale rather than the strategies employed to successfully traverse the Idea to Implementation transition.

***In either case, the idea succeeds or fails not on its inherent greatness alone but on the capacity of those who propose it to convince those who might fund it that the idea can be made to work with sufficient certainty to fall within the risk tolerance levels of those holding the purse strings.***

**Bottom line:** there is no way to determine whether what is claimed to be a great idea, and may well seem to be a great idea, is, in fact, truly a great idea unless a research implementation plan gives the reviewers some degree of confidence that the proposed research can likely be fully realized and successful. Of course, the level of confidence required by reviewers that an idea can be realized will differ by agency or program, spanning the spectrum from reasonably safe research to high-risk, high-payoff research gambling, so to speak, at the frontiers of new scientific knowledge.

## Research Development & Grant Writing News

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In either case, a plan for research implementation imposes reality on an idea by testing it in some defined way(s). It no longer exists as an intriguing abstraction—a potentially great idea of undetermined state, both dead and alive, somewhat like Schrödinger’s Cat. However, it is not uncommon that the authors of the research narrative become lulled into thinking that an elegant idea alone is sufficient for funding. In some cases, PIs misjudge how much specificity and detail it takes to convince reviewers that a great idea can be realized if funded. In other cases, PIs may find themselves uncertain how to describe the proposed idea in a way that convinces reviewers to fund it.

In fact, not all ideas are fully thought out at the start of a research narrative. In many ways, writing the narrative is a voyage of discovery for the research team. They may start developing it with a general idea that only fully reveals itself after multiple proposals emerge over many weeks, or even months on a large center proposal. The key touchstone for making the transition from idea to implementation is specificity, not only in narrative text but in such integrative graphics as milestone charts, logic models, and the like. **Bottom line:**

- Specifics make your research vision, goals, objectives, rationale, and outcomes believable, convincing, and memorable to reviewers;
- Specifics convince reviewers of your capacity to perform; that your research will advance the field; and
- Specifics test and prove the value of your ideas. ***When they are lacking, it tells reviewers that your ideas may also be lacking, or have yet to be fully developed.***

For example, a recent article in the Washington Post—[How \(and why\) chemists figured out how to unboil an egg](#)—certainly captures the reader’s attention, as it would reviewers, if this [University of California--Irvine](#) research were proposed to an appropriate funding agency. The point here is that this article nicely illustrates ***traversing the idea*** (that proteins change their shape but not their bonding patterns) ***to implementation transition*** (instrumentation to refold cancer-associated proteins created in the lab in minutes rather than weeks). Moreover, it also illustrates how the research is ***significant to the field*** (time and cost efficiency in cancer research) and at ***what scale*** (cancer treatments). And finally, the article nicely reflects Einstein’s observation that *“If you can’t explain an idea simply, you don’t understand it well enough. Most of the fundamental ideas of science are essentially simple, and should be described as simply as they can be, but not simpler.”*

The take-away message here is that, all too often, the authors of the research narrative pay insufficient attention to clearly describing in the Project Description how their research will make the idea to implementation transition. An idea without a robust implementation plan is like an implementation plan without a robust idea—neither will fare well with reviewers on their own. Both a robust idea and a robust implementation plan must be clearly present in the research narrative to ensure funding success.

## Materials Genome Initiative Strategic Plan

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By Lucy Deckard, co-publisher

[\(Back to Page 1\)](#)

In 2011, the President announced the [Materials Genome Initiative \(MGI\)](#) with the goal of discovering, developing, manufacturing and deploying advanced materials twice as fast and at a fraction of the current cost (we discussed this in detail in our April 2012 issue). In subsequent years, we've seen a number of new funding programs supporting the MGI goals released at the federal research agencies that fund materials research. In December, the National Science and Technology Council released a new [Materials Genome Initiative Strategic Plan](#).

As we've often said, when pursuing external funding to support your research, it's critical that you understand the current priorities of the funding agencies, but even more importantly, you need to understand where those priorities (and future funding programs) will be in the future. This MGI Strategic Plan provides an excellent opportunity for researchers engaged in materials-related research to gain insight into the future funding landscape for materials research and development. A summary of the report, with comments, is provided below. However, if you're likely to pursue funding in this area, I **strongly recommend** you read the entire report.

### Strategic Goals and Milestones

The Strategic Plan sets forth four overarching goals, each with specific objectives and milestones. They're listed below (likely new funding in blue):

- **Goal 1. Leading a culture shift in materials science research to encourage and facilitate an integrated team approach**
  - **Objective 1.1:** Encourage and facilitate integrated R&D
    - Milestone 1.1.1: Over a 2-year period, increase the [cumulative number of researchers who have participated in MGI-related projects by 50%](#). [DoD, DOE, and NSF].
    - Milestone 1.1.2: Hold regular, multiagency principal investigator meetings to build a stronger MGI community. Include industry representatives in those meetings. [DoD, DOE, and NSF].
    - Milestone 1.1.3: Over a 2-year period, [add multiple Foundational Engineering Problem \(FEP\) projects](#) supported by the Federal Government. [DoD and DOE]
    - Milestone 1.1.4: Over a 2-year period, identify opportunities for [three new MGI related cross-agency grants or coordinated projects](#). [DoD, DOE, and NIST].
  - **Objective 1.2:** Facilitate adoption of the MGI approach
    - Milestone 1.2.1: Work with materials science and engineering university programs, professional societies, and industry to define venues that promote interactions, transition, and integration between academic and industry

## Research Development & Grant Writing News

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researchers, including students, on MGI-related projects. [Subcommittee on the Materials Genome Initiative (SMGI)]

- Milestone 1.2.2: Over a 2-year period, launch [an incentive prize](#) focused on demonstrating the use of MGI techniques to rapidly deliver new materials. [DOE, NASA, and NIST].

- **Objective 1.3**: Engage the International Community

- Milestone 1.3.1: Continue to pursue opportunities for collaborations with international partners, participate in international forums for discussions of materials science R&D, and build on strengths of existing international partnerships [SMGI].

➤ **Goal 2: Integrate experiment, computation, and theory and equip the materials community with advanced tools and techniques.**

- **Objective 2.1**: Create a MGI Network of Resources

- Milestone 2.1.1: Work with the materials community across the full materials development continuum to establish an information inventory, including contact information or web links, for openly available codes, software, and experimental capabilities for synthesis and characterization, as a resource for the community. [SMGI]
- Milestone 2.1.2: Establish a network of research groups focused on developing predictive software for structural materials. Document lessons learned and best practices for use in launching an additional network for other material and application areas. [DoD, DOE, NIST, and NSF].

- **Objective 2.2**: Enable Creation of Accurate, Reliable Simulations

- Milestone 2.2.1: Convene the materials community working across all technology readiness levels to identify major scientific and engineering challenges for theory, modeling, and simulation for different materials classes and associated cross-cutting methods and algorithms. Hold a workshop annually and publish an associated report with an evolving focus on different materials types. Projected topics to be addressed in the first four years include structural materials, magnetic materials, energy storage materials, and electronic materials. [SMGI]

- **Objective 2.3**: Improve Experimental Tools—From Materials Discovery through Deployment

- Milestone 2.3.1: Convene a multiagency workshop to assess the current state and future directions for characterization tools that allow in situ and in operando assessments of materials properties, synthesis and processes. [DoD, DOE, NASA, NIST, and NSF]
- Milestone 2.3.2: Convene a series of multiagency workshops to identify major scientific and technical challenges limiting the application of the integrated, collaborative MGI approach toward advanced manufacturing of materials and products, Conduct workshops in the first four years focusing on specific material classes and applications including lightweight metals,

## Research Development & Grant Writing News

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- catalysts, batteries and energy storage, and semiconductors and integrated circuits. [NIST, DOE, DoD, and NSF]
  - Milestone 2.3.3: Initiate benchmarking studies to quantify the current time to market for a subset of materials classes or applications. [NIST]
  - **Objective 2.4**: Develop Data Analytics to Enhance the Value of Experimental and Computational Data
    - Milestone 2.4.1: Convene a path-finding workshop focused on the status of computational tools for data analytics for applications emerging from materials sciences and engineering. [NIST]
- **Goal 3: Make digital data accessible**
  - **Objective 3.1**: Identify Best Practices for Implementation of a Materials Data Infrastructure
    - Milestone 3.1.1: Convene a series of multiagency workshops that engage stockholders, including researchers from academia, industry, publishing, and government to establish the needs of the disparate materials communities, identify the barriers to creating a materials data infrastructure, and define potential methods of overcoming these obstacles. [DoD and NIST]
    - Milestone 3.1.2: Foster ongoing discussion of best practices in data management plans used by participating agencies with the opportunity to leverage these for broader applications with the MGI community. [SMGI]
  - **Objective 3.2**: Support Creation of Accessible Materials Data Repositories
    - Milestone 3.2.1: Develop and implement at least [three materials data repository pilot projects](#) to assess a range of repository models and initiate the definition of a materials data infrastructure model. [DoD, DOE, and NIST]
- **Goal 4: Create a world-class materials science and engineering workforce that is trained for careers in academia or industry**
  - **Objective 4.1**: Pursue New Curriculum Development and Implementation
    - Milestone 4.1.1: Create opportunities, such as [summer schools or laboratory internships](#), aimed at training faculty, postdoctoral researchers, and graduate students in the MGI approach to materials science and engineering. Topics may include familiarizing experimental materials scientists with current state-of-the-art modeling and theory and familiarizing computational materials scientists with synthesis and characterization techniques and limitations. [DoD, DOE, and NSF]
    - Milestone 4.1.2: Convene university departments engaged in materials research, including physics, chemistry, bioscience, and engineering, to identify: 1) the educational approaches and the institutional and professional incentives needed to sustain interdisciplinary research, and 2) opportunities to better integrate theory, modeling experimental, and data analytics training for undergraduate and graduate students pursuing careers or research in materials. Identify and share best practices through annual meetings of academic leaders. [SMGI]

## Research Development & Grant Writing News

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- Milestone 4.1.3: Facilitate discussions among Federal agencies, academia, and industry to identify capabilities and skill requirements for recent graduates entering the industrial workforce and ways to prioritize their development at educational institutions. [SMGI].
- **Objective 4.2**: Provide Opportunities for Integrated Research Experiences
  - Milestone 4.2.1: Facilitate a dialogue on best practices and opportunities both for existing programs and potential new partnerships among industry, universities, Federal agencies, and National and Federal laboratories to provide [opportunities for real-world experience](#) in applying the MGI approach. [SMGI]
  - Milestone 4.2.2: Develop and propose options for expanding [postdoctoral research opportunities](#) to include targeted positions in research teams specifically implementing the MGI approach. [SMGI]

Other sections of the report discuss the MGI in terms of **achieving national objectives** (national security, human health and welfare, clean energy systems, and infrastructure and consumer products), and specific **MGI grand challenges** as they relate to specific applications or classes of materials (Biomaterials, Catalysts, Polymer Composites, Correlated Materials, Electronic and Photonic Materials, Energy Storage Systems, Lightweight and Structural Materials, Organic Electronic Materials and Polymers). An appendix discusses the various Federal agencies (DoD, DOE, NASA, NIST, NIH, NSF, and USGS) and **their MGI-related emphasis areas**.

### Strategic Goals and Milestones

In our opinion, there are several lessons or action items that PIs interested in future materials-related funding should take away from this report:

- ⇒ **If you plan to pursue Federal funding to support materials research, be sure you can place your research in the context of MGI.** The report laid out plans to fund a number of new MGI-related programs. Given the relatively stagnant budget environment for research, this means that funding for materials research is likely to shift substantially toward projects that support the MGI goals. Therefore, even if you're proposing a single-PI project, you'll want to be able to describe how your research will advance the goals of MGI, even if that just means addressing one component of the MGI "cycle."
- ⇒ **If you don't already have strong multi-disciplinary collaborations (including co-authored papers) that support the MGI approach, start building them.** MGI research is by its fundamental nature a multi-disciplinary, collaborative endeavor. As more materials research funding is shifted to support MGI goals, competitive proposals will need to be team-based. And in order for a team-based proposal to be convincing to reviewers, some evidence of previous collaboration (such as co-authored papers or previous joint funding) is needed.
- ⇒ **If you don't already have strong connections with materials researchers and engineers in industry, start building them.** The report repeatedly emphasized the role of industry in helping to achieve the MGI vision. The need for this is self-evident since industry will



## *Research Development & Grant Writing News*

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take the pivotal role in actually transitioning new materials into commercial applications. Therefore, funders and reviewers are likely to expect more robust and extensive collaborations with industry partners for materials-related research proposals in the future.

- ⇒ **There are likely to be extensive funding opportunities for collaborations that include computer scientists and other experts in data and information science.** Development, use, management, and sharing of digital data are mentioned again and again in the strategic plan. In addition, concepts like “workflow” (a concept familiar to software engineers but relatively foreign to most academic materials researchers) are discussed. Insights contributed by data, information and computer scientists could make a team very competitive for proposals addressing these issues.
- ⇒ **Keep informed on MGI-related workshops.** The strategic plan called for a total of ten different meetings or workshop series. If possible, attend these workshops (many may be invitation-only, but senior materials researchers at your institution may be able to get an invitation by talking to agency program officers), talk to colleagues who did attend, and look for reports or presentations that may come out of these workshops. Workshops such as these often lead to new funding opportunities or new directions for existing funding opportunities. Participating in these workshop can provide opportunities to influence the directions of these funding opportunities, better understand what the funding agency is looking for, find potential collaborators, and assess the likely competition for the next funding opportunity.
- ⇒ **Talk to Program Officers who fund research in your area, and keep an eye out for new funding announcements.** This strategic plan called for numerous new funding programs. It’s always best if you know well in advance when these funding solicitations will be released. You can often find that out by talking to your P.O.s and networking with your colleagues, as well as keeping an eye on the agency websites.

### **Other Resources**

[The Materials Genome Initiative Turns Three](#)

[NSF Designing Materials to Revolutionize and Engineer our Future \(DMREF\)](#) solicitation

[NSF DMREF program page](#)

Materials Innovation@ TMS:

- [Materials Genome Initiative page](#)
- Presentations from the Materials Information Luncheon: [Accelerating Materials Manufacturing Innovation for Global Competitiveness](#)
- Presentations from the Materials Information Luncheon: [Equipping the Next Generation Workforce for Materials Innovation](#)

[NSF DMR Presentation on DMREF](#) (Tom Rieker)



## Writing Proposals to USDA/NIFA/AFRI

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By [Mike Cronan](#), co-publisher

([Back to Page 1](#))

USDA funds grants for research and education in topic areas of interest to many university researchers across a broad range of disciplines, both within and outside agricultural colleges. These include water resources, energy, ecosystems, and the environment, as well as a range of other agricultural mission areas. Moreover, USDA occasionally participates in partner solicitations with other federal research agencies, including NSF, DOE, and EPA. USDA funds both intramural research through the Agricultural Research Service ([ARS](#)) and extramural research through the National Institute of Food and Agriculture ([NIFA](#)). See [Looking for Funding at NIFA](#).

Within NIFA, the [Agriculture and Food Research Initiative](#) (AFRI) is charged with funding “research, education, and extension grants and **integrated** research, extension, and education grants that address key problems of National, regional, and multi-state importance in sustaining all components of agriculture, including farm efficiency and profitability, ranching, renewable energy, forestry (both urban and agroforestry), aquaculture, rural communities and entrepreneurship, human nutrition, food safety, biotechnology, and conventional breeding. Providing this support requires that **AFRI advances fundamental sciences** in support of agriculture.” AFRI solicits its core program through [seven separate RFAs](#).

NIFA is the USDA's major extramural research agency of most interest to university researchers and research offices. [NIFA's 2014-2018 Strategic Plan](#) defines its mission, vision, and core values. NIFA's mission, according to the agency, is to “invest in and advance **agricultural research, education and extension** to solve societal challenges.” The agency vision is to “catalyze transformative discoveries, education, and engagement to address agricultural challenges” (see a summary of the [NIFA 2014–2018 Strategic Plan](#)). “NIFA supports [research](#), [education](#), and [extension](#) programs. NIFA also supports **integrated projects** (research, education, and extension) that are expected to generate new knowledge and/or apply existing knowledge quickly through the dissemination of information on specific issues where results may become visible quickly.” However, unlike most other federal research agencies, NIFA does not fund unsolicited or investigator-initiated proposals.

Moreover, it is important to complement your understanding of the NIFA strategic plan with an understanding of how your proposal will be reviewed by that agency. See [The NIFA Peer Review Process for Competitive Grant Applications](#). NIFA reviews all proposals accepted in the individual competitive programs through the peer-review process. Moreover, the agency notes, the review process begins with the “publication of the Request for Applications (RFA) for the NIFA competitive program of interest. The RFA is published on the agency Web site and is accessible through funding opportunity Web pages. The RFA can also be accessed through [Grants.gov](#), the Web site for federal government grants. Occasionally RFAs are also published in the Federal Register. The RFA includes all of the pertinent information for the current funding cycle, including program purpose, legislative mandates, award types, eligibility requirements,

## Research Development & Grant Writing News

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evaluation criteria, submission instructions, program goals and funding priorities, proposal submission deadlines, and application submission instructions.”

In addition to reviewing NIFA’s strategic plan, published RFAs and the review process, another useful document for developing your own strategic funding plan at USDA/NIFA is the [FY 2016 Budget Summary and Annual Performance Plan](#) (February 2, 2015). The strategic plan gives you the long-term research mission/vision of NIFA through 2018, but the annual Budget Summary presented to Congress each year gives you the details and specifics of how the strategic plan will be implemented and funding levels for programs on a year-to-year basis. Also check out [NIFA RSS Feeds](#).

Regardless of whether or not you are new to NIFA, a review of the strategic plan will enable you to better map your research interests and capacities to the NIFA mission. If you are in a research office that supports faculty, then this review will make you better able to advise them. Keep in mind that the USDA is a mission agency. Therefore, proposals submitted to NIFA will be judged on how well the proposed research advances NIFA’s mission objectives and the value-added benefits the research brings to that mission. As is the case with any mission agency, a successful response to a NIFA RFA (Research Funding Announcement) requires that you meet two conditions: (1) propose a great idea that (2) meets what NIFA defines as **“program strategic deliverables”** addressed in the RFA.

The Strategic Plan specifically defines four key goals for NIFA. The most relevant goal for university researchers and research offices is the overarching NIFA **“GOAL 1: Science--Catalyze exemplary and relevant research, education and extension program,”** defined in more detail by the following subgoals. It is important to note that NIFA considers “research, education, and extension as three equal and essential parts of the value proposition transforming agriculture.” To accomplish this, NIFA “integrates food and agricultural sciences with human sciences (e.g., economics, sociology and psychology).”

- Subgoal 1.1: Advance our Nation’s ability to achieve global food security and fight hunger;
- Subgoal 1.2: Advance the development and delivery of science for agricultural, forest, and range systems adapted to climate variability and to mitigate climate impacts;
- Subgoal 1.3: Optimize the production of goods and services from working lands while protecting the Nation’s natural resource base and environment;
- Subgoal 1.4: Contribute to U.S. energy independence and enhance other agricultural systems through the development of regional systems for the sustainable production of optimal biomass (forests and crops) for the production of bioenergy and value-added biobased industrial products;
- Subgoal 1.5: Combat childhood obesity by ensuring the availability of affordable, nutritious food and providing individuals and families science-based nutritional guidance;
- Subgoal 1.6: Reduce the incidence of foodborne illness and provide a safer food supply; and

# Research Development & Grant Writing News

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- Subgoal 1.7: Ensure the development of human capital, communities, and a diverse workforce through research, education, extension, and engagement programs in food and agricultural sciences to support a sustainable agriculture system.

Based on the above goals, NIFA-funded research spans 13 national emphasis areas, including:

- [Agricultural Systems](#)
- [Animals](#)
- [Biotechnology & Genomics](#)
- [Economics & Community Development](#)
- [Education](#)
- [Families, Youth & Communities](#)
- [Food, Nutrition & Health](#)
- [International](#)
- [Environment & Natural Resources](#)
- [Pest Management](#)
- [Plants](#)
- [Technology & Engineering](#)

## Types of Research at NIFA

***“NIFA-funded research may be basic or applied,”*** according to the agency. *“Basic research* discovers the underlying processes and systems that make a plant, animal, ecosystem, food system, community, or marketplace work. For example, basic research might seek to discover the genetic map of a plant or animal, or show how economic and human resources affect economic growth in rural areas.”

***Applied research expands on basic research findings*** to uncover practical ways in which new knowledge can be advanced to benefit individuals and society. Here, researchers might use a genetic map to develop gene therapies to treat human diseases or develop new programs to enhance community capital and stability in rural communities.

NIFA-sponsored research may involve traditional, self-contained laboratory or field projects, or a combination of a traditional research project with education and extension activities. Such a so-called [integrated](#) project might have as a goal the reduction of diabetes in children through a community-based program that includes research, extension, and education components. Integrated projects are expected to generate new knowledge and/or apply existing knowledge quickly through the dissemination of information on specific issues where results may be visible in the short term.”

Understanding the above distinctions is important to be successful at NIFA, particularly noting the distinction between basic and applied research at the agency. One common mistake made in proposals declined for funding is submitting applied research to a basic research solicitation.

## Integrating research, education, and extension at NIFA

“One of the founding pillars of NIFA is to bring together research, education, and extension in a coordinated manner on high-priority national, multistate, or regional agricultural

## *Research Development & Grant Writing News*

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issues....NIFA places high value on integration in program design and implementation in order to address the many and complex problems facing U.S. agriculture. Research, education, and extension integration may be done at the project level or more generally at the program level. A project or program is optimally integrated if the components complement one another and are truly necessary for its ultimate success. Research is expected to address knowledge gaps that are critical to the development of practices and programs to address a problem. Extension activities will lead to measurable, documented changes in learning, actions, or conditions in an identified audience or stakeholder group. Education initiatives will strengthen institutional capacities and result in curricula and related products that provide sustained impact. Integration of research, education, and extension is regularly assessed as part of NIFA's portfolio review process."

If your goal is funding success at NIFA, you can improve your chances by reviewing its strategic plan, review process, and budget summary, thereby deepening your understanding of a NIFA funding solicitation (RFA) and better mapping your research interests and expertise to the NIFA mission objectives.

## Research Grant Writing Web Resources

(Back to [Page 1](#))

### Make the Match with NIH RePORTER

Since 2008, NIH's Research Portfolio Online Reporting Tools, better known as [RePORT](#), has provided easy access to info on NIH funded research. My office continues to look at new ways to enhance your access to important information through robust search tools, data visualization dashboards, and more. I'd like to highlight one of our newer tools today: **Matchmaker**.

[Matchmaker](#) allows you to enter manuscript abstracts, research bios, or other scientific text, and retrieve a list of similar projects from the RePORTER database. After you submit your text (up to 15,000 characters in length), Matchmaker will analyze it for key terms and concepts, then pull up the top 100 most-similar NIH-funded projects, ranked by match score.

You'll notice that it also returns several graphs to allow you to easily visualize the distribution of NIH institutes or centers funding these projects, what activity codes these projects use, and which study section the project was reviewed in. You can also click on these graphs to further refine your results as well. For example, you can click on a specific activity code and see how the study section or funding IC distribution changes. Exploring NIH's research portfolio can help you identify the best ICs to reach out to as you put together an application and where your application is likely to be reviewed. It can also help you identify collaborators, potential labs to move into if you're a trainee, and more. Check out the video below and have fun making your match.

### USDA/NIFA Logic Models

A logic model is a conceptual tool for planning and evaluation which displays the sequence of actions that describes what the science-based program is and will do. A logic model:

- Clarifies the linkages between investments and activities, outputs and expected outcomes of the policy, program or initiative;
- Communicates externally about the rationale, activities and expected results of the policy, program or initiative;
- Tests whether the policy, program or initiative "makes sense" from a logical perspective; and
- Provides the fundamental framework on which the performance measurement and evaluation strategies are based (i.e., determining what would constitute success).

There are many variations on the specific composition of a logic model. For its purposes, NIFA has developed a [generic logic model](#) that includes the following components:

- Situation -- A description of the challenge or opportunity. The problem or issue to be addressed, within a complex of socio-political, environmental, and economic conditions.
- Inputs --What is invested, such as resources, contributions, and investments that are provided for the program.
- Activities - Activities are what the program does with its inputs to services it provides to fulfill its mission.

## *Research Development & Grant Writing News*

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- Outputs - Products, services and events that are intended to lead to the program's outcomes.
- Outcomes - Planned results or changes for individuals, groups, communities, organizations or systems. Types of outcomes include:
  - Change in knowledge -- Occurs when there is a change in knowledge or the participants actually learn.
  - Change in behavior-- Occurs when there is a change in behavior or the participants act upon what they have learned.
  - Change in condition-- Occurs when a societal condition is improved.

External factors --Variables that may have an effect on the portfolio, program, or project but which cannot be changed by the managers of the portfolio, program, or project.

Assumptions -- The premises based on theory, research, evaluation knowledge, etc. that support the relationships of the elements of the logic model and upon which the success of the portfolio, program, or project rests.

### **Resources**

- See [Frequently Asked Questions about Logic Models](#) for more technical information about logic models

## Educational Grant Writing Web Resources

(Back to [Page 1](#))

### STEM Teaching Tools: Practice Brief Collection for NGSS

People have asked us if there was a way to easily grab the entire collection of tools. So we have made the entire collection—in the "pretty", ready-to-print PDF format—available in one easy place for browsing and downloading. Follow the link below to the new Google folder and off you go. If you want ready access to the new tools as they come out, just add that folder to your Google drive. Here's the link: <http://STEMteachingtools.org/link/PDFcollection/>. We are gratified to hear that so many people have been using the tools. Some people are printing out the PDF versions and reading and discussing them in PD sessions or at science department / PLC meetings. Others are putting the PDFs on tablet devices for people to read during these meetings—so people can browse the links. Some are broadly sharing the PDF versions electronically with colleagues. That is all great to hear. Please drop us a note at [STEMteachingtools@uw.edu](mailto:STEMteachingtools@uw.edu) if there other ways we can make the site more useful.

### Dear Colleagues,

It is our great pleasure to invite applications for the inaugural ***National Academies Special Topics Summer Institute on Course-based Undergraduate Research Experiences***.

Numerous calls for reform in undergraduate STEM education have emphasized involving undergraduates in doing research because of education studies showing how students benefit from research experiences. To offer research experiences at scale, faculty are developing Course-based Undergraduate Research Experiences, or CUREs. CUREs involve whole classes of students in addressing a research question or problem that is of interest to the scientific community. Not only do CUREs present students with opportunities to make scientific discoveries, CUREs involve students in numerous activities that have been shown to improve learning, especially when compared to traditional lab courses. CUREs also offer the capacity to involve many students in research and can serve all students who enroll in a course – not only self-selecting students who seek out research internships or who participate in specialized programs.

The Texas Institute for Discovery Education in Science (TIDES; <https://cns.utexas.edu/tides>) at The University of Texas at Austin (UT-Austin) is home to two major CURE initiatives – the Freshman Research Initiative (<https://cns.utexas.edu/fri>), which involves 800+ freshmen each year in CUREs across the natural sciences, and CUREnet, an NSF-funded network supporting widespread adoption of CURE instruction (<http://curenets.cns.utexas.edu/>). TIDES is joining forces with the National Academies Summer Institute (<http://www.academiessummerinstitute.org/>) to offer an intensive professional development session for faculty to develop their own CUREs.

**We invite applications to participate in the CURE Summer Institute (CURE SI).** Modeled on the National Academies Summer Institutes, the CURE SI will be a working meeting during which participants will learn about and use evidence-based teaching strategies to develop a CURE they will teach at their home institution during the 2015-2016 academic year. Working



## *Research Development & Grant Writing News*

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sessions will focus on the features of science research projects that lend themselves to CUREs, and on teaching CUREs using evidence-based teaching strategies, such as active learning, assessment, and mentoring. Each participant or participating team will have an experienced CURE instructor as an onsite facilitator and distant mentor as they teach their CUREs during the academic year. The CURE SI is distinct from the Freshman Research Initiative conference, which will be held again at UT-Austin in 2016.

The CURE SI will be held at UT-Austin from **June 28 to July 2, 2015**. The following costs will be covered by NSF funding for CUREnet:

- On-site meeting expenses and teaching resources
- Dinner on arrival night, June 28, 2015
- Breakfast and lunch each day
- Lodging for attending teams (not including graduate teaching assistants)

Participants will be expected to cover the following costs:

- Three dinners
- Travel to and from the CURE SI (travel grants are available as needed – see application for details)
- Travel and lodging for graduate student participants

We are accepting proposals from teams representing any science disciplines. Priority will be placed on:

- Applications from teams – two or three faculty members or instructional staff who will collaborate on developing a CURE or who will work side-by-side to develop CUREs at their institution. Graduate teaching assistants may also be a part of a team, but their travel and lodging must be covered by their home institution.
- Applications from diverse institutions, including research and comprehensive universities, liberal arts colleges, and community colleges.
- Proposals to develop CUREs that will enroll freshmen or sophomores.
- Proposals to develop CUREs for science majors.

As indicated on the application, selected participants are expected to teach their CURE, either as a stand-alone course, as part of an existing course, or in place of an existing course during the 2015-2016 academic year. Applications should be accompanied by a letter of support from the relevant department head(s). The CURE Summer Institute application and letter of support templates are attached to this email and available

at: <https://cns.utexas.edu/tides/faculty/summer-institutes>. **Review of applications will begin**

**March 2 and applicants will be notified regarding their status of their application by March**

**16.** Please contact us at [tides@austin.utexas.edu](mailto:tides@austin.utexas.edu) with any questions. Erin L. Dolan, Ph.D., Executive Director, Texas Institute for Discovery Education in Science, College of Natural Sciences, The University of Texas at Austin, Campus Mail Code: G2550, PAI 3.04, Austin, TX 78712; [edolan@austin.utexas.edu](mailto:edolan@austin.utexas.edu); 512-232-8346 office; 540-250-3073 cell; 512-232-1435 fax

### **Learning Through STEM-Rich Tinkering: Findings From a Jointly Negotiated Research Project Taken Up in Practice**

"The Maker Movement has taken the educational field by storm due to its perceived potential as a driver of creativity, excitement, and innovation (Honey & Kanter, 2013; Martinez & Stager,

## ***Research Development & Grant Writing News***

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2013). Making is promoted as advancing entrepreneurship, developing science, technology, engineering, and mathematics (STEM) workforce, and supporting compelling inquiry-based learning experiences for young people. In this paper, we focus on making as an educative inquiry-based practice, and specifically tinkering as a branch of making that emphasizes creative, improvisational problem solving. STEM-rich tinkering activities are designed to support interdisciplinary investigations and creativity using a STEM-rich palette of tools, concepts, and phenomena. To date, the majority of research on making has focused on analysis of makerspaces, maker communities, and design and implementation of maker activities. In this paper, we describe a study that documented dimensions of learning in tinkering programs designed for museum visitors. The study, which was jointly negotiated among a team of researchers and practitioners, led to the development of a Tinkering Learning Dimensions Framework and a publicly available video library of tinkering exemplars, both of which are being actively used by tinkering practitioners in their direct service to the public and professional development work for the field."

### **Forecast of Funding Opportunities under the Department of Education Discretionary Grant Programs for Fiscal Year (FY) 2015**

This document lists virtually all programs and competitions under which the Department (we) has invited or expects to invite applications for new awards and provides actual or estimated deadline dates for the transmittal of applications under these programs. The lists are in the form of charts -- organized according to the Department's principal program offices -- and include programs and competitions we have previously announced, as well as those we plan to announce at a later date. If you are interested in applying for any upcoming grants with the Department of Education, please take the time to register with SAM at [www.SAM.gov](http://www.SAM.gov), as you must have an active account in order to submit a grant application with our agency. We recommend you register now even as you are looking for eligible grant programs so that your SAM registration is active by the time the application is published. This will allow you to focus on writing the application during the period the application is available and you are not spending a portion of that time obtaining SAM registration. Please click [here](#) to refer to the SAM tip sheet for additional information.

*Note:* This document is advisory only and is not an official application notice of the Department of Education. We expect to provide updates to this document starting in the first week of June in a fiscal year and continuing through the following August. Please keep in mind that the dates recorded in this document are SUBJECT TO CHANGE and that the average size/number of awards are ESTIMATES.

### **Gender Differences in Science, Technology, Engineering, and Mathematics (STEM) Interest, Credits Earned, and NAEP Performance in the 12th Grade**

## Agency Research News

(Back to [Page 1](#))

### [DE-FOA-0001274 Laboratory and Open Water Testing of Marine and Hydrokinetic Systems](#)

Complete information, including the full RFI, can be found on the EERE Exchange website at <https://eere-exchange.energy.gov>. The U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy invites input from the public regarding a potential effort to facilitate laboratory, or open-ocean testing of prototype marine and hydrokinetic MHK devices. Details regarding the planned testing of prototype MHK devices for system integration, structural performance, and power performance are specifically requested; as well as discussion of the anticipated facility, site, instrumentation, expertise, and logistical support needed to advance the technical readiness of the device. The information gathered with this RFI will be used to inform strategic planning by the DOE to advance the marine and hydrokinetic industry. DOE is specifically interested in collecting information regarding existing MHK systems and the anticipated resources necessary to test and validate these early-stage technologies in either a laboratory or open-water environment. **This is a Request for Information and not a Funding Opportunity Announcement**; therefore, EERE is not accepting applications at this time.

**Respond by February 17.**

### [RFI: Program Strategy to Advance Marine and Hydrokinetics](#)

Through a balanced portfolio approach, the U.S. Department of Energy (DOE) Wind and Water Power Technologies Office (WWPTO's) Water Power Program, herein referred to as the "Program," makes strategic investments in the Marine and Hydrokinetic (MHK) subprogram, including transformational technology innovations that seek to maximize generation from water power resources while addressing key market deployment and environmental impact challenges. The Program aims to achieve cost-competitiveness with local hurdle rates of 12 to 15 cents per/kWh by 2030. The Program addresses technology needs and opportunities in MHK, which would otherwise not be addressed by the private sector on its own. The purpose of this RFI is to solicit feedback from industry, academia, research laboratories, state energy offices, regulatory offices, related offshore engineering consultants/Original Equipment Manufacturers (OEMs), and other stakeholders on the Program's future strategy and priorities. EERE is specifically interested in information on each of the five focus areas listed in the RFI. Responses to this RFI must be submitted electronically to [MHKRFI@ee.doe.gov](mailto:MHKRFI@ee.doe.gov) no later than 5:00pm (ET) on **March 20, 2015**. Responses must be provided as .pdf or Microsoft Word (.docx) attachment to the email. It is recommended that attachments with file sizes exceeding 25MB be compressed (i.e., zipped) to ensure message delivery. Only electronic responses will be accepted. This is solely a request for information and not a Funding Opportunity Announcement (FOA). EERE is not accepting applications through this RFI. DOE will not respond to questions regarding this RFI.

### [NIFA Strategic Plan for 2014–2018, Message from the Director](#)

The National Institute of Food and Agriculture is pleased to publish our [Strategic Plan for Fiscal Years 2014–2018](#). Our plan will serve as our "roadmap" for the next five years, setting forth

## ***Research Development & Grant Writing News***

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specific and measureable goals and strategies. This plan will enable NIFA to lead and invest in agricultural research, education and extension to solve significant societal challenges. Our Strategic Plan will shape our decision-making and positions NIFA to more effectively and efficiently accomplish our critical priorities over the next five years. Furthermore, this Strategic Plan will form the overarching framework for our financial and employee performance plans. In developing this Strategic Plan, we heard from a wide range of stakeholders, Land Grant institutions, other partners, and our dedicated employees through listening sessions, focus groups and surveys. This plan reflects the tremendous sharing of information, ideas, and thoughts. We appreciate the input and look forward to continued dialogue to further strengthen research, education, and extension related to agriculture, communities, and society. This plan focuses on four major goals that are in strict alignment with the [2014 Farm Bill](#); the [USDA Strategic Plan \(FY 2014-2018\)](#); and the [Research, Education, and Economics \(REE\) Action Plan](#).

### **AHRQ Announces Interest in Research on Health IT Safety**

This Special Emphasis Notice (SEN) informs the research community that in fiscal year 2015 the Health IT Portfolio at the Agency for Healthcare Research and Quality (AHRQ) intends to support research regarding the safety of health IT systems. While health IT has been shown to improve health care quality and safety, recent research suggests that it may also potentially cause new errors (i.e., technology-induced errors). In particular, the design (including usability) and implementation of health IT systems can impact how the systems are used and lead to errors. There is a need for improved approaches to health IT system design, usability, and implementation; to understand how users interact with the systems; to carefully monitor the systems' use and performance post-implementation; and to understand how to address causes of errors. In addition, many have called for the use of user-centered design, and human factors and ergonomics, sociotechnical systems theory, human-computer engineering, usability engineering, and other related frameworks and approaches to improve health IT safety. AHRQ is interested in funding applications that will conduct research on safe health IT practices specifically related to the design, implementation, usability, and safe use of health IT by all users, including patients. These projects would generate new evidence on safe health IT practices that could be used by the Office of the National Coordinator for Health IT, the Food and Drug Administration, the Centers for Medicare and Medicaid Services and others to inform health IT certification and other forms of policy guidance. R01 projects should include personnel from health IT vendors and health care delivery organizations in the project personnel. Patient Safety Organization involvement in R01 projects is strongly encouraged, as is industry partnership.

### **Notice of Intent to Issue Funding Opportunity Announcement DE-FOA-0001271 Cleantech University Prize (Cleantech UP)**

The purpose of this Notice of Intent is to provide potential applicants advance notice that the Office of Energy Efficiency and Renewable Energy (EERE) intends to issue, on behalf of the Technology-to-Market Team in the Office of Strategic Programs, a Funding Opportunity Announcement (FOA) entitled "Cleantech University Prize (Cleantech UP)," Number DE-FOA-

## Research Development & Grant Writing News

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0001271. The full Notice of Intent DE-FOA-0001284 is posted on the EERE eXCHANGE website at <https://eere-exchange.energy.gov>.

The Cleantech UP program seeks to catalyze clean energy start-up formation on college campuses, support novel training and educational opportunities that equip the next generation of energy entrepreneurs and innovators across the country, establish a national-level training program and competition for America's top clean energy student entrepreneurs, and create a sustained and diverse community to support student entrepreneurs.

The mission of EERE's Technology-to-Market Team is to aid EERE technology offices and American energy innovation stakeholders in addressing the technological and financial barriers to bring new intellectual property to market. To advance this mission, the Technology-to-Market Sub-Program supports a variety of commercialization and entrepreneurship activities in partnership with U.S. Department of Energy (DOE) national laboratories, universities, businesses, and nonprofit organizations around the country. Existing activities include the DOE National Clean Energy Business Plan Competition (DOE NCEBPC), National Incubator Initiative for Clean Energy, Lab-Corps, and Small Business Innovation Research/Small Business Technology Transfer Programs (SBIR/STTR); past activities include the Innovation Ecosystem Development Initiative, i6 Green Challenge, Technology Commercialization Fund, Entrepreneurs-in-Residence, and other initiatives.

NO APPLICATIONS WILL BE ACCEPTED THROUGH THIS NOTICE. Please do not submit questions or respond to this Notice of Intent. Prospective applicants to the FOA should begin developing partnerships, formulating ideas, and gathering data in anticipation of the issuance of this FOA. **DOE plans to issue the FOA around mid-February 2015.** The applicant must first register and create an account on the EERE eXCHANGE website. A User Guide for EERE eXCHANGE can be found on the EERE website <https://eere-exchange.energy.gov/Manuals.aspx> after logging in to the system. For more information, see the [full solicitation](#).

### [Sea-Level Rise, Geohazards Among Priorities for Ocean Science Research](#)

A new report from the National Research Council identifies priority areas for ocean science research in the next decade, including the rate and impacts of sea-level rise, the effects of climate change on marine ecosystems, greater understanding of marine food webs, and better approaches for forecasting hazards such as mega-earthquakes and tsunamis. The report also recommends that the National Science Foundation rebalance its funding for ocean science research, which in recent years has shifted toward research infrastructure at the expense of core science programs. The 8 priority science questions that emerged from this process are:

- What are the rates, mechanisms, impacts, and geographic variability of sea-level change?
- How are the coastal and estuarine ocean and their ecosystems influenced by the global hydrologic cycle, land use, and upwelling from the deep ocean?
- How have ocean biogeochemical and physical processes contributed to today's climate and its variability, and how will this system change over the next century?
- What is the role of biodiversity in the resilience of marine ecosystems and how will it be affected by natural and anthropogenic changes?
- How different will marine food webs be at mid-century? In the next 100 years?

## ***Research Development & Grant Writing News***

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- What are the processes that control the formation and evolution of ocean basins?
- How can we better characterize risk and improve the ability to forecast geohazards like mega-earthquakes, tsunamis, undersea landslides, and volcanic eruptions?
- What is the geophysical, chemical, and biological character of the seafloor environment and how does it affect global elemental cycles and understanding of the origin and evolution of life?

### **Notice of Intent : Next Generation of Electric Machines**

The purpose of this Notice is to provide potential applicants advance notice that the Advanced Manufacturing Office, on behalf of the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE), intends to issue a FOA titled "Next Generation of Electric Machines" (DE-FOA-0001208). This Notice is issued so that interested parties are aware of the EERE's intention to issue this FOA in the near term. All of the information contained in this Notice is subject to change. EERE may issue a FOA as described herein, may issue a FOA that is significantly different than the FOA described herein, or DOE may not issue a FOA at all. NO APPLICATIONS WILL BE ACCEPTED THROUGH THIS NOTICE. Please do not submit questions or respond to this Notice of Intent. Prospective applicants to the FOA should begin developing partnerships, formulating ideas, and gathering data in anticipation of the issuance of this FOA. It is anticipated that this FOA will be posted to EERE eXCHANGE in February 2015. The applicant must first register and create an account on the EERE eXCHANGE website. A User Guide for the EERE eXCHANGE can be found on the EERE website <https://eere-exchange.energy.gov/Manuals.aspx> after logging in to the system. For more information, see the [full solicitation](#).

### **Dear Colleague Letter: Hydrologic Sciences and Physical and Dynamic Meteorology Cooperation**

The National Science Foundation's Directorate for Geosciences supports research programs in both [Hydrologic Sciences \(HS\)](#) and [Physical and Dynamic Meteorology \(PDM\)](#). These programs share a common interest in (1) the fluxes of water, mass and energy across the terrestrial-atmospheric boundary, (2) how such fluxes are measured and (3) how such fluxes are parameterized within large and small scale models. A host of research reports have identified multiple ways in which the terrestrial and atmospheric systems are coupled (Duffy et al., 2006; IPCC, 2013; NRC, 2012a, 2012b; Ralph et al., 2012; Smith et al., 2013) and there is growing recognition of the importance of these couplings, interactions, and their interdependencies for both scientific research and operational prediction.

To encourage interactions between the Hydrologic Science and Physical and Dynamic Meteorology research communities in advancing this critical research, a community workshop was held 3-5 September, 2014 in Golden, Colorado. The purpose of this workshop was to motivate and accelerate progress on hydrometeorological-hydroclimatic-ecohydrological process understanding across the terrestrial-atmospheric boundary, and especially the integration of common research interests of hydrology and meteorology. The results of the meeting are reported in a white paper that can be accessed using:

## *Research Development & Grant Writing News*

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<http://www.nsf.gov/geo/ear/programs/nsf-hydro-atmos-workshop-whitepaper-dec2014.pdf> or <http://inside.mines.edu/~thogue/nsf-hydro-atmo-workshop/>.

One goal of the workshop was to outline high-level, cross-discipline research needs common to both Hydrologic Sciences and Physical and Dynamic Meteorology to define areas of collaborative research between those two research communities. Another goal of the workshop was to redefine current disciplinary barriers such that the "boundary conditions" of individual disciplines evolve towards a more holistic process understanding and predictive skill. This white paper provides detailed statements of the core challenges in the 'observational' and 'modeling' categories, as the 'scientific challenges' clearly cross-cut in both categories. Each "challenge" section has an overarching component and a set of high-level sub-components.

Within this context, innovative proposals that specifically address challenges existing at the atmospheric-terrestrial boundary, including challenges in process understanding, measurement and modeling can be sent to either program. Topical areas are suggested in the above referenced white paper, however this document does not define all possible research areas across this boundary. Proposals in this area of research will be co-reviewed by both programs and will be supported from existing programmatic funds. Proposals are accepted at any time in both the PDM and HS programs. If you have a research topic that you think would be of interest, please contact the program officers in either group.



# *Research Development & Grant Writing News*

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## *Agency Reports, Workshops & Research Roadmaps*

(Back to [Page 1](#))

[FY 2016 Budget Request to Congress for DOE's Office of Science](#)

[FY 2016 Budget Request to Congress for NSF](#)

[FY 2016 Budget Request to Congress for USDA](#)

[FY 2016 Budget Request to Congress for NIH](#)

[FY 2016 Budget Request to Congress for NOAA](#)

[FY 2016 Budget Request to Congress for NASA](#)

[FY 2016 Budget Request to Congress for Department of Education](#)

[FY 2016 Budget Request to Congress for NEH](#)

[Increases/Decreases: FY 2016 S&T Budget Requests](#)

[The President's 2016 Budget: Agency Fact Sheets](#)

Listed in the table below are links to fact sheets for each agency.

- [Corporation for National and Community Service](#)
- [Department of Agriculture](#)
- [Department of Commerce](#)
- [Department of Defense](#)
- [Department of Education](#)
- [Department of Energy](#)
- [Department of Health and Human Services](#)
- [Department Housing and Urban Development](#)
- [Department of Homeland Security](#)
- [Department of the Interior](#)
- [Department of Justice](#)
- [Department of Labor](#)
- [Department of State](#)
- [Department of Treasury](#)
- [Department of Transportation](#)
- [Department of Veteran Affairs](#)
- [Environmental Protection Agency](#)
- [National Aeronautics and Space Administration](#)
- [National Intelligence Programs](#)

## *Research Development & Grant Writing News*

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- [National Science Foundation](#)
- [Social Security Administration](#)
- [Small Business Administration](#)
- [US Army Corps of Engineers](#)

# *Research Development & Grant Writing News*

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## *New Funding Opportunities*

(Back to [Page 1](#))

### **Content Order**

New Funding Posted Since January 15 Newsletter

URL Links to New & Open Funding Solicitations

Solicitations Remaining Open from Prior Issues of the Newsletter

Open Solicitations and BAAs

**[User Note:** URL links are active on date of publication, but if a URL link breaks or changes a Google search on the key words will typically take you to a working link. Also, entering a grant title and/or solicitation number in the Grants.gov search box will typically work as well.]

### **New Funding Solicitations Posted Since January 15 Newsletter**

#### **ONR-15-FOA-0006 Fiscal Year 2015 Office of Naval Research Young Investigator Program (YIP)**

The Office of Naval Research (ONR) is interested in receiving proposals for its Young Investigator Program (YIP). ONR's Young Investigator Program (YIP) seeks to identify and support academic scientists and engineers who are in their first or second full-time tenure-track or tenure-track-equivalent academic appointment, have begun their first appointment on or after 01 Nov 2009, and who show exceptional promise for doing creative research. The objectives of this program are to attract outstanding faculty members of Institutions of Higher Education (hereafter also called "universities") to the Department of the Navy's research program, to support their research, and to encourage their teaching and research careers. **Due March 4.**

#### **NSF 15-536 Research Experiences for Teachers (RET) in Engineering and Computer Science**

The Directorate for Engineering (ENG) and the Directorate for Computer and Information Science and Engineering (CISE), have joined to support the Research Experiences for Teachers (RET) in Engineering and Computer Science program. This program supports active long-term collaborative partnerships between K-12 Science, Technology, Engineering, Computer and Information Science, and Mathematics (STEM) teachers and community college and university faculty and students to bring knowledge of engineering or computer and information science and engineering as well as technological innovation to pre-college/community college classrooms. The goal of these partnerships is to enable K-12 STEM teachers and community college faculty to translate their research experiences and new knowledge gained in university settings into their classroom activities. The university team will include faculty, graduate and undergraduate students as well as industrial advisors. Involvement of graduate students in support of academic-year classroom activities is particularly encouraged. Partnerships with inner city, rural or other high needs schools are especially encouraged, as is participation by underrepresented minorities, women, and persons with disabilities. As part of the long-term

## *Research Development & Grant Writing News*

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partnership arrangements, university undergraduate/graduate students will partner with pre-college/community college faculty in their classrooms during the academic year to help teach engineering/computer science concepts. This announcement features two mechanisms for support of in-service and pre-service K-12 STEM teachers and community college faculty: (1) RET supplements to ongoing ENG and CISE awards and (2) new RET Site awards. RET supplements may be included outside this solicitation in proposals for new or renewed NSF Directorate for Engineering (ENG) and Directorate for Computer and Information Science and Engineering (CISE) grants or as supplements to ongoing NSF ENG and CISE funded projects. RET in Engineering and Computer Science Sites, through this solicitation, are based on independent proposals from engineering or computer and/or information science departments, schools or colleges to initiate and conduct research participation projects for K-12 STEM teachers and/or community college faculty. **Due April 8.**

### Dimensions of Biodiversity FY2015

The goal of the Dimensions of Biodiversity campaign is to transform, by 2020, how we describe and understand the scope and role of life on Earth. This campaign promotes novel integrative approaches to fill the most substantial gaps in our understanding of the diversity of life on Earth. It takes a broad view of biodiversity, and focuses on the intersection of genetic, phylogenetic, and functional dimensions of biodiversity. Successful proposals must integrate these three dimensions to understand interactions and feedbacks among them. While this focus complements several core programs in BIO and GEO, it differs by requiring that multiple dimensions of biodiversity be addressed simultaneously, in novel ways, to understand their synergistic roles in critical ecological and evolutionary processes. The Dimensions of Biodiversity program again includes partnerships with the National Natural Science Foundation of China (NSFC) and São Paulo Research Foundation (FAPESP) of Brazil in fiscal year 2015. **Due April 9.**

### DE-FOA-0001233 Emerging Technologies for Methane Production via Biological In-Situ Coal Conversion and Low Cost Oxygen Production for Gasification

For Fiscal Year 2015, the Advanced Energy Systems (AES) Program will solicit proposals under this Funding Opportunity Announcement for support of the Gasification Systems technology area. There will be a total of two Areas of Interest. The AES Program is pursuing research and development to (1) accelerate in-situ bio-gasification of coal seams with a goal of creating methane at a lower cost than typical U.S. natural gas recovery systems; and (2) produce oxygen for use in coal gasification processes at a significantly lower cost than that of the commercial state of the art technology. **Due April 13.**

### NIJ-2015-3976 NIJ FY 15 Research and Evaluation on Justice Systems

NIJ is seeking proposals for social and behavioral science research on, and evaluation related to, justice systems topics including policing, courts, and institutional and community corrections that bear directly and substantially upon federal, State, local, or tribal criminal and juvenile justice policy and practice. **Due April 15.**

## *Research Development & Grant Writing News*

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### DE-FOA-0001271 Cleantech University Prize (Cleantech UP)

The Office of Energy Efficiency and Renewable Energy (EERE) has issued, on behalf of the Technology-to-Market Team in the Office of Strategic Programs, a Funding Opportunity Announcement (FOA) number DE-FOA-0001271 entitled Cleantech University Prize (Cleantech UP). The full text of the FOA is posted on the EERE eXCHANGE website at <https://eere-exchange.energy.gov>. The mission of EERE's Technology-to-Market Team is to aid EERE technology offices and American energy innovation stakeholders in addressing the technological and financial barriers to bring new intellectual property to market. To advance this mission, the Technology-to-Market sub-program supports a variety of commercialization and entrepreneurship activities in partnership with U.S. Department of Energy (DOE) national laboratories, universities, businesses, and nonprofit organizations around the country. Existing activities include the DOE National Clean Energy Business Plan Competition (NCEBPC), National Incubator Initiative for Clean Energy, Lab-Corps, and Small Business Innovation Research/Small Business Technology Transfer Programs (SBIR/STTR); past activities include the Innovation Ecosystem Development Initiative, i6 Green Challenge, Technology Commercialization Fund, Entrepreneurs-in-Residence, and other initiatives. This FOA supports the creation of the Cleantech University Prize (Cleantech UP) program designed to address the significant barriers to creating clean energy technology start-ups, resulting from a dearth of participants entering the energy entrepreneurship pipeline. For the United States to accelerate the rate of clean energy innovation and remain competitive, a strong national infrastructure that spurs and supports high-tech entrepreneurship is critical. **Due April 16.**

### NIJ-2015-3990 NIJ FY 15 Building and Enhancing Criminal Justice Researcher-Practitioner Partnerships

NIJ is seeking proposals for criminal justice research and evaluation that includes a researcher-practitioner partnership component. Through researcher-practitioner partnerships, criminal justice practitioners can gain new skills in assessing programs and measuring outcomes. Likewise, criminal justice researchers can better understand the goals and purposes criminal justice practitioners seek to achieve. Ultimately, these partnerships provide criminal justice practitioners with practice- and policy-relevant information while affording researchers the opportunity to contribute to the current body of knowledge. NIJ intends to support criminal justice research in the two following areas related to new and ongoing researcher-practitioner collaborations: Junior Faculty/Research Associate Grant Program to Promote Criminal Justice Researcher-Practitioner Partnerships. Criminal Justice Researcher-Practitioner Fellowship Placement Program. **Due April 20.**

### Basic Research to Enable Agricultural Development (BREAD)

There are two focus areas in FY 2015: Developing High Throughput, Low Cost Phenotyping Tools and Devices (PHENO) and Advancing Basic Research in Crop Plants Relevant to Smallholder Agriculture in Developing Countries (ABRDC). Research in these two areas only will be supported in FY 2015. The Basic Research to Enable Agricultural Development (BREAD) Program was established in 2009 as a National Science Foundation (NSF) program supported in partnership with the Bill & Melinda Gates Foundation (BMGF). The goal of BREAD is to support

## ***Research Development & Grant Writing News***

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innovative basic scientific research designed to address key constraints to smallholder agriculture in the developing world. Proposals submitted to BREAD must make a clear and well-defined connection between the outcomes of the proposed basic research and its direct relevance and potential application to agriculture in the developing world. In FY 2015, activities in two focus areas will be supported: (1) Developing High Throughput, Low Cost Phenotyping Tools and Devices to facilitate assessment of field-based phenotypes, especially for root and tuber crops (PHENO), and (2) Advancing Basic Research in Crop Plants Relevant to Smallholder Agriculture in Developing Countries (ABRDC) to develop critically needed sequence and functional genomics resources to enable basic and applied research in crop plants important for smallholder agriculture. As in past competitions, proposals are expected to address project outcomes in the context of broader societal impacts, and as appropriate to the research proposed, engage international partners in scientific collaborations. **Due April 27.**

### **Solar Powering America by Recognizing Communities (SPARC)**

This funding opportunity announcement (FOA) will establish a prominent national recognition and technical assistance program for local governments that will signal to installers and the public that a community is receptive to solar businesses and has established a supportive solar market environment. This, in turn, will reduce market barriers and lower soft costs, thus contributing to SunShot goals. The program will also assist marginal communities in improving their solar markets. The full FOA is posted on the [EERE Exchange website](#). Applications must be submitted through the EERE Exchange website to be considered for award. For more information, see the [full solicitation](#). **Due April 27.**

### **DE-FOA-0001269 Topical Collaborations in Nuclear Theory DOE - Office of Science**

The Office of Nuclear Physics (NP), Office of Science (SC), U.S. Department of Energy (DOE), hereby announces its interest in receiving proposals for Topical Collaborations in Nuclear Theory. Topical Collaborations are fixed-term, multi-institution collaborations established to investigate a specific topic in nuclear physics of special interest to the community, which is aligned with programmatic NP goals and has not been addressed by a previous Topical Collaboration. Topical Collaborations also provide a mechanism for maintaining a robust community, by encouraging the creation of tenured university appointments and permanent laboratory positions in nuclear theory. A companion Program Announcement to DOE Laboratories (LAB15-1269) will be posted on the SC Grants and Contracts website at <http://science.energy.gov/grants>. **Due April 30.**

### **Professional Formation of Engineers (PFE: RIEF) Research Initiation in Engineering Formation**

The NSF Engineering (ENG) Directorate has launched a multi-year initiative, the Professional Formation of Engineers, to create and support an innovative and inclusive engineering profession for the 21st Century. Professional Formation of Engineers (PFE) refers to the formal and informal processes and value systems by which people become engineers. It also includes the ethical responsibility of practicing engineers to sustain and grow the profession. The engineering profession must be responsive to national priorities, grand challenges, and dynamic workforce needs; it must be equally open and accessible to all.

## ***Research Development & Grant Writing News***

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Engineering faculty possess both deep technical expertise in their engineering discipline and the primary responsibility for the process of professional formation of future engineers. As such, engineering faculty are in a unique position to help address critical challenges in engineering formation. The Professional Formation of Engineers: Research Initiation in Engineering Formation (PFE: RIEF) program enables engineering faculty who are renowned for teaching, mentoring, or leading educational reform efforts on their campus to initiate collaborations with colleagues in the social and/or learning sciences to address difficult, boundary-spanning problems in the professional formation of engineers. **Due April 30.**

### **Challenge Grants National Endowment for the Humanities**

The mission of the NEH Office of Challenge Grants is to advance knowledge and understanding in the humanities by strengthening the institutional base of humanities teaching, scholarly research, public programming, and other humanities activities. Challenge grants are capacity-building grants, intended to support significant humanities activities of high intellectual quality and to help institutions secure long-term support for their humanities programs. Through these grants many organizations and institutions have been able to increase their humanities capacity and secure the permanent support of an endowment. Grants may be used to establish or enhance endowments or spend-down funds that generate expendable earnings to support and enhance ongoing program activities. Challenge grants may also provide capital directly supporting the procurement of long-lasting objects, such as acquisitions for archives and collections, the purchase of equipment, and the construction or renovation of facilities needed for humanities activities. Funds spent directly must be shown to bring long-term benefits to the institution and to the humanities more broadly. Grantee institutions may also expend up to 10 percent of total grant funds (federal funds plus matching funds) to defray costs of fundraising to meet the NEH challenge. Because of the matching requirement, these NEH grants also strengthen the humanities by encouraging nonfederal sources of support. Applications are welcome from colleges and universities, museums, public libraries, research institutions, historical societies and historic sites, scholarly associations, state humanities councils, and other nonprofit humanities entities. **Due May 5.**

### **National Science Foundation Research Traineeship (NRT) Program**

This solicitation extends and broadens the scope of the NSF Research Traineeship (NRT) program launched in 2014. Proposals are invited in two tracks: the Traineeship Track (maximum 5 years, \$3.0 million), dedicated to the education of STEM graduate students through an innovative, evidence-based traineeship approach in high-priority interdisciplinary research areas; and the Innovations in Graduate Education (IGE) Track (2–3 years, up to \$300,000–\$500,000) dedicated solely to piloting, testing, and evaluating bold, new graduate-education approaches, models, and activities and to generate the knowledge required for their customization, implementation, and scaling. This solicitation is active for two years, and future NRT solicitations are anticipated. A letter of intent is recommended for both tracks. **Due May 6.**

### **20150610-HZ Humanities Open Book Program**



## *Research Development & Grant Writing News*

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NEH and Mellon are soliciting proposals from academic presses, scholarly societies, museums, and other institutions that publish books in the humanities to participate in the Humanities Open Book Program. Applicants will provide a list of previously published humanities books along with brief descriptions of the books and their intellectual significance. Depending on the length and topics of the books, the number to be digitized may vary. However, NEH and Mellon anticipate that applicants may propose to digitize a total that ranges from less than fifty to more than one hundred books. Awards will be given to digitize these books and make them available as Creative Commons-licensed “ebooks” that can be read by the public at no charge on computers, mobile devices, and ebook readers. **Due June 10.**

### **NOAA-NOS-IOOS-2016-2004378 FY 2016 Implementation of the U.S. Integrated Ocean Observing System (IOOS®)**

The U.S. Integrated Ocean Observing System (IOOS®) is a national and regional partnership working to provide observations, data, and new tools and forecasts to improve safety, enhance the economy, and protect our environment. NOAA is requesting proposals for coordinated regional efforts that further the IOOS in two topic areas, 1) sustaining and enhancing comprehensive regional observing systems and 2) verification and validation of observing technologies for studying and monitoring coastal and ocean environments. NOAA invites applicants to submit proposals for one or both of these topic areas, described in detail below, and requests applicants submit separate applications for each topic area. For single topic proposals, clearly identify the topic area and present all required information such that merit reviewers can associate proposal elements (project description, partners, budgets) with the specific topic area. NOAA anticipates making multiple awards, subject to the availability of funds, in amounts ranging from \$1,000,000 to \$4,000,000 per year, for up to five years. **Due August 31.**

### **BAA-RQKH-2015-0001 Methods and Technologies for Personalized Learning, Modeling and Assessment Air Force -- Research Lab**

The Air Force Research Laboratories and 711th Human Performance Wing are soliciting white papers (and later technical and cost proposals) on the following research effort. This is an open ended BAA. The closing date for submission of White Papers is 17 Nov 2019. This program deals with science and technology development, experimentation, and demonstration in the areas of improving and personalizing individual, team, and larger group instructional training methods for airmen. The approaches relate to competency definition and requirements analysis, training and rehearsal strategies, and models and environments that support learning and proficiency achievement and sustainment during non-practice of under novel contexts. This effort focuses on measuring, diagnosing, and modeling airman expertise and performance, rapid development of models of airman cognition and specifying and validating, both empirically and practically, new classes of synthetic, computer-generated agents and teammates. An Industry Day was held in November 2014. Presentation materials from the Industry Day and Q&A's are attached. If you would like a list of Industry Day attendees, send an email request to [helen.williams@us.af.mil](mailto:helen.williams@us.af.mil) **Open until November 17, 2019.**

# Research Development & Grant Writing News

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## ***URL Links to New & Open Funding Solicitations***

*Links verified: Saturday, October 04, 2014*

- [HHS Grants Forecast](#)
- [American Cancer Society Index of Grants](#)
- [SAMHSA FY 2014 Grant Announcements and Awards](#)
- [DARPA Microsystems Technology Office Solicitations](#)
- [Open Solicitations from IARPA \(Intelligence Advanced Research Projects Activity\)](#)
- [Bureau of Educational and Cultural Affairs, Open Solicitations, DOS](#)
- [ARPA-E Funding Opportunity Exchange](#)
- [DOE Funding Opportunity Exchange](#)
- [NIAID Funding Opportunities List](#)
- [NPS Broad Agency Announcements \(BAAs\)](#)
- [NIJ Current Funding Opportunities](#)
- [NIJ Forthcoming Funding Opportunities](#)
- [Engineering Information Foundation Grant Program](#)
- [Comprehensive List of Collaborative Funding Mechanisms, NORDP](#)
- [ARL Funding Opportunities — Open Broad Agency Announcements \(BAA\)](#)
- [HHS Grants Forecast](#)
- [American Psychological Association, Scholarships, Grants and Awards](#)
- [EPA 2014 Science To Achieve Results \(STAR\) Research Grants](#)
- [NASA Open Solicitations](#)
- [Defense Sciences Office Solicitations](#)
- [The Mathematics Education Trust](#)
- [EPA Open Funding Opportunities](#)
- [CDMRP FY 2014 Funding Announcements](#)
- [Office of Minority Health](#)
- [Department of Justice Open Solicitations](#)
- [DOE/EERE Funding Opportunity Exchange](#)
- [New Funding Opportunities at NIEHS \(NIH\)](#)
- [National Human Genome Research Institute Funding Opportunities](#)
- [Army Research Laboratory Open Broad Agency Announcements \(BAA\)](#)
- [SBIR Gateway to Funding](#)
- [Water Research Funding](#)
- [Fellowship and Grant Opportunities for Faculty Humanities and Social Sciences](#)
- [DARPA Current Solicitations](#)
- [Office of Naval Research Currently Active BAAs](#)
- [HRSA Health Professions Open Opportunities](#)
- [NIH Funding Opportunities Relevant to NIAID](#)
- [National Institute of Justice Current Funding Opportunities](#)
- [Funding Opportunities by the Department of Education Discretionary Grant Programs](#)

# *Research Development & Grant Writing News*

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- [EPA's Office of Air and Radiation \(OAR\) Open Solicitations](#)
- [NETL Open Solicitations](#)
- [DoED List of Currently Open Grant Competitions](#)
- [Foundation Center RFP Weekly Funding Bulletin](#)

## **Solicitations Remaining Open from Prior Issues of the Newsletter**

### **20150310-HT Institutes for Advanced Topics in the Digital Humanities**

These NEH grants support national or regional (multistate) training programs for scholars and advanced graduate students to broaden and extend their knowledge of digital humanities. Through these programs, NEH seeks to increase the number of humanities scholars using digital technology in their research and to broadly disseminate knowledge about advanced technology tools and methodologies relevant to the humanities. The projects may be a single opportunity or offered multiple times to different audiences. Institutes may be as short as a few days and held at multiple locations or as long as six weeks at a single site. For example, training opportunities could be offered before or after regularly occurring scholarly meetings, during the summer months, or during appropriate times of the academic year. The duration of a program should allow for full and thorough treatment of the topic. Today, complex data its form, manipulation, and interpretations are as important to humanities study as more traditional research materials. Datasets, for example, may represent digitized historical records, high-quality image data, or even multimedia collections, all of which are increasing in number due to the availability and affordability of mass data storage devices and international initiatives to create digital content. Moreover, extensive networking capabilities, sophisticated analytical tools, and new collaboration platforms are simultaneously providing and improving interactive access to and analysis of these data as well as a multitude of other resources. The Institutes for Advanced Topics in the Digital Humanities program seeks to enable humanities scholars in the United States to incorporate advances like these into their scholarship and teaching. **Due March 10.**

### **2015NEA03LFCW NEA Literature Fellowships: Prose, FY 2016**

The Arts Endowment's support of a project may begin any time between January 1, 2016, and January 1, 2017, and extend for up to two years. Grant Program Description The NEA Literature Fellowships program offers \$25,000 grants in prose (fiction and creative nonfiction) and poetry to published creative writers that enable recipients to set aside time for writing, research, travel, and general career advancement. Applications are reviewed through an anonymous process in which the only criteria for review are artistic excellence and artistic merit. To review the applications, the NEA assembles a different advisory panel every year, each diverse with regard to geography, race and ethnicity, and artistic points of view. The NEA Literature Fellowships program operates on a two-year cycle with fellowships in prose and poetry available in alternating years. For FY 2016, which is covered by these guidelines, fellowships in prose (fiction and creative nonfiction) are available. Fellowships in poetry will be offered in FY 2017 and guidelines will be available in the fall of 2015. You may apply only once each year. Competition for fellowships is extremely rigorous. We typically receive more than 1,000

## ***Research Development & Grant Writing News***

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applications each year in this category and award fellowships to fewer than 5% of applicants. You should consider carefully whether your work will be competitive at the national level. **Due March 11.**

### **2015-NIST-RET-01 NIST Research Experience for Teachers**

NIST is soliciting applications from eligible public school districts and accredited private educational institutions in the U.S. and its territories nominating science teachers in grades six (6), seven (7), and/or eight (8), who have successfully completed the NIST Summer Institute for Middle School Science Teachers (NIST Summer Institute) Program. Teachers must have completed the NIST Summer Institute Program prior to applying to participate in the NIST RET Program. The NIST RET Program will allow the selected teachers to participate in scientific research with NIST scientists and engineers at the NIST Campus in Gaithersburg, Maryland. **Due March 18.**

### **NIJ-2015-4016 NIJ FY 15 Collecting Digital Evidence from Large-Scale Computer Systems and Networks**

NIJ seeks proposals for funding to conduct research and technology development leading to the introduction into practice of new and innovative means to speed the processing of large-scale computer systems and computer networks for digital evidence in a forensically sound manner that preserves the probative value of the evidence that the computer system or network may contain. **Due March 23.**

### **NSF 15-534 Campus Cyberinfrastructure - Data, Networking, and Innovation Program**

The Campus Cyberinfrastructure - Data, Networking, and Innovation (CC\*DNI) program invests in campus-level data and networking infrastructure and integration activities tied to achieving higher levels of performance, reliability and predictability for science applications and distributed research projects. Science-driven requirements are the primary motivation for any proposed activity. **Due March 24.**

### **USDA-NIFA-AFRI-004797 AFRI Food, Agriculture, Natural Resources and Human Sciences Education and Literacy Initiative**

The AFRI Food, Agriculture, Natural Resources and Human Sciences Education and Literacy Initiative (AFRI ELI) focuses on developing the following: opportunities for undergraduate students at colleges and universities, including those from underrepresented ethnicities and economically disadvantaged groups at minority-serving institutions, community colleges, and other universities to obtain hands-on experience at land-grant and non-land-grant universities and USDA laboratories and obtain training to join the agricultural workforce or pursue graduate studies in food, agriculture, natural resources and the human sciences. technical and functional competence for predoctoral students; and the research independence and teaching credentials of postdoctoral students. **Due May 6.**

### **ONR-15-FOA-0003 National Security Science And Engineering Faculty Fellowship**

## *Research Development & Grant Writing News*

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Research Opportunity Description The National Security Science and Engineering Faculty Fellowship (NSSEFF) program is sponsored by the Basic Research Office, Office of Assistant Secretary of Defense for Research and Engineering (ASD (R&E)). NSSEFF supports innovative basic research within academia, as well as education initiatives that seek to create and develop the next generation of scientists and engineers for the defense and national security workforce. The Office of Naval Research (ONR) manages the NSSEFF program for ASD (R&E). To accomplish this task, ONR is soliciting proposals for the NSSEFF program through this Funding Opportunity Announcement. This FOA seeks outstanding and distinguished researchers for the purpose of conducting innovative basic research in areas of interest to the Department of Defense (DoD) and fostering long-term relationships between the NSSEFF Fellows and the DoD. For full description, see full announcement. **Proposal due April 24.**

### [GCC-GRANT-SEP-15-001 Spill Impact Component Planning Grants Gulf Coast Ecosystem Restoration Council](#)

This announcement provides guidance to the Gulf Coast States – defined as any of the States of Alabama, Florida, Louisiana, Mississippi, and Texas – or the Gulf Coast States’ administrative agents and the Gulf Consortium of Florida counties to apply for grants to fund planning activities to develop individual State Expenditure Plans (SEP) under the Spill Impact Component of the Resources and Ecosystem Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States Act of 2012 (RESTORE Act). The eligible entities may apply to the Council for a grant to use the minimum allocation available under the Spill Impact Component of the RESTORE Act for planning purposes. The submission process for this announcement is organized into two phases: (1) the submission of a planning SEP by a Gulf Coast State; and (2) the administrative application process, which includes the submission of all administrative grant application materials by the eligible entities. All planning activities proposed under this announcement are limited to the development of a comprehensive SEP, including conceptual design and feasibility studies related to specific projects. This announcement does not include engineering and environmental studies related to specific projects. It also does not include any pre-award costs incurred prior to August 22, 2014. **December 31, 2015**

## **Open Solicitations and BAAs**

### [Research Interests of the Air Force Office of Scientific Research](#)

AFOSR plans, coordinates, and executes the Air Force Research Laboratory’s (AFRL) basic research program in response to technical guidance from AFRL and requirements of the Air Force; fosters, supports, and conducts research within Air Force, university, and industry laboratories; and ensures transition of research results to support USAF needs. The focus of AFOSR is on research areas that offer significant and comprehensive benefits to our national warfighting and peacekeeping capabilities. These areas are organized and managed in three scientific directorates: Aerospace, Chemical and Material Sciences, Physics and Electronics, and Mathematics, Information and Life Sciences. **Open until superseded.**

### [DARPA-BAA-14-25 Innovative Systems for Military Missions](#)

## *Research Development & Grant Writing News*

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The Tactical Technology Office of the Defense Advanced Research Projects Agency is soliciting executive summaries, white papers and proposals for advanced research and development of Innovative Systems for Military Missions. This solicitation seeks system and subsystem level technologies that enable revolutionary improvements to the efficiency and effectiveness of the military. Novel concepts are sought in the following focus areas: Ground Systems, Maritime Systems, Air Systems, and Space Systems. Proposals may be submitted at any time while this solicitation is open. TTO may publish groups of special topics as modifications to this BAA throughout the year. TTO also welcomes classified submissions. A copy of the Broad Agency Announcement, DARPA-BAA-14-25, has been posted to the Federal Business Opportunities (FedBizOpps.gov) website at <https://www.fbo.gov/spg/ODA/DARPA/CMO/DARPA-BAA-14-25/listing.html> . **Open to April 24, 2015.**

### **DARPA-BAA-14-54 Biological Technologies EZ**

The Defense Advanced Research Projects Agency (DARPA) is soliciting innovative research proposals of interest to the Biological Technologies Office (BTO). Of particular interest are those proposals from entities (both small and large business) that have never received Government funding, or who do not normally propose to Government solicitations. Proposed research should investigate leading edge approaches that enable revolutionary advances in science, technologies, or systems at the intersection of biology with engineering and the physical and computer sciences. Specifically excluded is research that primarily results in evolutionary improvements to the existing state of the art. BTO seeks unconventional approaches that are outside the mainstream, challenge assumptions, and have the potential to radically change established practice, lead to extraordinary outcomes, and create entirely new fields. **Open to July 23, 2015.**

### **Broad Agency Announcement for Research Initiatives at Naval Postgraduate School**

The Naval Postgraduate School (NPS) is interested in receiving proposals for research initiatives that offer potential for advancement and improvement in the NPS core mission of graduate education and research. Readers should note that this is an announcement to declare NPS's solicitation in competitive funding of meritorious research initiatives across a spectrum of science and engineering, business, politics and public/foreign policy, operational and information sciences, and interdisciplinary disciplines that are in line with the NPS' graduate education and research mission. Additional information on the Naval Postgraduate School's graduate education and research mission is available at: General Information:

<http://www.nps.edu/About/index.html> ; NPS Strategic Plan:

<http://www.nps.edu/About/NPSStratPlan.html> ; Academic Programs:

<http://www.nps.edu/Academics/index.html> ; Research Programs:

<http://www.nps.edu/Research/index.html> ; Prior to preparing proposals, potential Offerors are strongly encouraged to contact an NPS point of contact (POC) whose program and research efforts best match the Offeror's field of interest. The academic and research programs links above can be used to locate an appropriate POC by exploring the information provided about the faculty members in NPS' schools, research institutes, and interdisciplinary centers and research groups. **Open to July 31, 2015.**



# *Research Development & Grant Writing News*

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## Small University Grants Open 5-Year Broad Agency Announcement

**Open to August 26, 2015**

### DARPA-BAA-14-48 Strategic Technologies

DARPA is seeking innovative ideas and disruptive technologies that offer the potential for significant capability improvement across the Strategic Technology Office focus areas. This includes technology development related to Battle Management, Command and Control (BMC2), Communications and Networks, Electronic Warfare, Intelligence, Surveillance, and Reconnaissance (ISR), Position, Navigation, and Timing (PNT), Maritime, and Foundational Strategic Technologies and Systems. **BAA Closing Date: September 17, 2015**

### ONRBAA15-001 Long Range BAA for Navy and Marine Corps Science and Technology

The Office of Naval Research (ONR) is interested in receiving proposals for Long-Range Science and Technology (S&T) Projects which offer potential for advancement and improvement of Navy and Marine Corps operations. Readers should note that this is an announcement to declare ONR's broad role in competitive funding of meritorious research across a spectrum of science and engineering disciplines. A brief description of the ONR Program Codes and the science and technology thrusts that ONR is pursuing is provided below. Additional information can be found at the ONR website at <http://www.onr.navy.mil/Science-Technology/Departments.aspx>. Potential Offerors are urged to check the program areas that they are interested in throughout the year for updates to thrust areas and research priorities on the ONR website at <http://www.onr.navy.mil>. Prior to preparing proposals, potential offerors are strongly encouraged to contact the ONR point of contact (POC). To identify the POC, follow the link for the appropriate code or division listed below and then click on the link to the thrust or topic area. Each thrust or topic area will provide a POC or e-mail address. **BAA Closing Date: September 30, 2015**

### DHS-2014-OHA-BIOWATCH BioWatch Program: 2014-2015

The BioWatch Program is a cornerstone of the Department of Homeland Security's (DHS) comprehensive strategy for countering biological terrorism. The BioWatch Program is an early warning system that is designed to detect the intentional release of select aerosolized biological agents. The BioWatch Program's mission is to provide and maintain a continuous bio-terrorism air monitoring system in metropolitan areas and coordinate with state and local public health communities to prepare for and respond to a bioterrorist event. This mission is accomplished by serving as an early warning system which enhances the security of jurisdictions by providing the needed time to execute their comprehensive concept of operations plans to counter biological terrorism. The Biowatch Program is a critical part of an ongoing national effort to build and sustain preparedness which helps the United States to maintain momentum through targeted jurisdictional planning that highlights preventative actions necessary to allow for a proper and timely response and begin the process to recovery from a biological agent release. The BioWatch Evaluation Program (BWEP) will be conducted under the BioWatch Quality Assurance Program effective April 1, 2013. This program will consist of independent external audits (Quality Assurance) by Signature Science and internal audits (Quality Control) by



## ***Research Development & Grant Writing News***

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BioWatch Systems Program Office field personnel. This approach will initially be conducted with a focus on adherence to the BioWatch Field Operations Standard Operating Procedure (SOP), Version 1.3 and will eventually evolve to encompass the Field Operations Quality Assurance Program Plan (QAPP). In order to ensure a robust QA / QC program the jurisdictions may be subject to a QA external audit and a QC internal audit during the same cooperative agreement cycle (year). **Closes September 30, 2015.**

### **DE-FOA-0001204 FY 2015 Continuation of Solicitation for the Office of Science**

The Office of Science of the Department of Energy hereby announces its continuing interest in receiving grant applications for support of work in the following program areas: Advanced Scientific Computing Research, Basic Energy Sciences, Biological and Environmental Research, Fusion Energy Sciences, High Energy Physics, and Nuclear Physics. On September 3, 1992, DOE published in the Federal Register the Office of Energy Research Financial Assistance Program (now called the Office of Science Financial Assistance Program), 10 CFR 605, as a Final Rule, which contained a solicitation for this program. Information about submission of applications, eligibility, limitations, evaluation and selection processes and other policies and procedures are specified in 10 CFR 605. This Funding Opportunity Announcement (FOA), DE-FOA-0001204, is our annual, broad, open solicitation that covers all of the research areas in the Office of Science and is open throughout the Fiscal Year. This FOA will remain open until September 30, 2015, 11:59 PM Eastern Time, or until it is succeeded by another issuance, whichever occurs first. This annual FOA DE-FOA-0001204 succeeds FOA DE-FOA-0000995, which was published October 1, 2013. **Open to September 30, 2015.**

### **Nuclear Energy University Programs - Fellowship and Scholarship**

This program supports education and training for future nuclear scientists, engineers and policy-makers who are attending U.S. universities and colleges in nuclear-related graduate, undergraduate and two-year study programs. These are zero-dollar awards that will be funded as students apply through the Department of Energy, Office of Nuclear Energy. **Open until November 30, 2015.**

### **FY2011 – 2016 Basic Research for Combating Weapons of Mass Destruction (C-WMD) Broad Agency Announcement (BAA)**

**This BAA is focused on soliciting basic research projects** that support the DTRA mission to safeguard America and its allies from WMD (e.g., ***chemical, biological, radiological, nuclear, and high-yield explosives***) by providing capabilities to reduce, eliminate, and counter the threat and mitigate its effects.

### **Open Solicitations from IARPA (Intelligence Advanced Research Projects Activity) Army Research Laboratory Broad Agency Announcement for Basic and Applied Scientific Research**

This Broad Agency Announcement (BAA), which sets forth research areas of interest to the **Army Research Laboratory** (ARL) Directorates and Army Research Office (ARO), is issued under the paragraph 6.102(d)(2) of the Federal Acquisition Regulation (FAR), which provides for the

## ***Research Development & Grant Writing News***

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competitive selection of basic research proposals. Proposals submitted in response to this BAA and selected for award are considered to be the result of full and open competition and in full compliance with the provision of Public Law 98-369, "The Competition in Contracting Act of 1984" and subsequent amendments. **Open June 1, 2012 to March 31, 2017.**

### **ARL Core Broad Agency Announcement for Basic and Applied Scientific Research for Fiscal Years 2012 through 2017**

#### **Air Force Research Laboratory, Directed Energy Directorate** **University Small Grants Broad Agency Announcement**

This is a five-year, open-ended Broad Agency Announcement (BAA) to solicit research proposals for the United States Air Force Research Laboratory (AFRL) Directed Energy (RD) Directorate. This BAA is a university grant vehicle that can provide small grants of \$100k or less to students/professors in a timely manner for the purpose of engaging U.S./U.S. territories' colleges and universities in directed energy-related basic, applied, and advanced research projects that are of interest to the Department of Defense. **Open to April 1, 2017.**

#### **HM0210-14-BAA-0001 National Geospatial-Intelligence Agency Academic Research Program**

NGA welcomes all innovative ideas for path-breaking research that may advance the GEOINT mission. The NGA mission is to provide timely, relevant, and accurate geospatial intelligence (GEOINT) in support of national security objectives. GEOINT is the exploitation and analysis of imagery and geospatial information to describe, assess, and visually depict physical features and geographically referenced activities on the Earth. GEOINT consists of imagery, imagery intelligence, and geospatial information. NGA offers a variety of critical GEOINT products in support of U.S. national security objectives and Federal disaster relief, including aeronautical, geodesy, hydrographic, imagery, geospatial and topographical information. The NGA Academic Research Program (NARP) is focused on innovative, far-reaching basic and applied research in science, technology, engineering and mathematics having the potential to advance the GEOINT mission. The objective of the NARP is to support innovative, high-payoff research that provides the basis for revolutionary progress in areas of science and technology affecting the needs and mission of NGA. This research also supports the National System for Geospatial Intelligence (NSG), which is the combination of technology, systems and organizations that gather, produce, distribute and consume geospatial data and information. This research is aimed at advancing GEOINT capabilities by improving analytical methods, enhancing and expanding systems capabilities, and leveraging resources for common NSG goals. The NARP also seeks to improve education in scientific, mathematics, and engineering skills necessary to advance GEOINT capabilities. It is NGA's intent to solicit fundamental research under this BAA. Fundamental research means basic and applied research in science and engineering, the results of which ordinarily are published and shared broadly within the scientific community, as distinguished from proprietary research and from Industrial development, design, production, and product utilization, the results of which ordinarily are restricted for proprietary or national security reason. (National Security Decision Directive (NSDD) 189, National Policy on the Transfer of Scientific, Technical, and Engineering Information). NGA seeks proposals from eligible U.S.

## ***Research Development & Grant Writing News***

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institutions for path-breaking GEOINT research in areas of potential interest to NGA, the DoD, and the Intelligence Community (IC). **Open to September 30, 2017.**

### **AFRL Research Collaboration Program**

The objective of the AFRL Research Collaboration program is to enable collaborative research partnerships between AFRL and Academia and Industry in areas including but not limited to Materials and Manufacturing and Aerospace Sensors that engage a diverse pool of domestic businesses that employ scientists and engineers in technical areas required to develop critical war-fighting technologies for the nation's air, space and cyberspace forces through specific AFRL Core Technical Competencies (CTCs). **Open until December 20, 2017.**

### **United States Army Research Institute for the Behavioral and Social Sciences Broad Agency Announcement for Basic, Applied, and Advanced Scientific Research (FY13-18)**

Announcement for Basic, Applied, and Advanced Scientific Research. This Broad Agency Announcement (BAA), which sets forth research areas of interest to the United States Army Research Institute for the Behavioral and Social Sciences, is issued under the provisions of paragraph 6.102(d)(2) of the Federal Acquisition Regulation (FAR), which provides for the competitive selection of proposals. Proposals submitted in response to this BAA and selected for award are considered to be the result of full and open competition and in full compliance with the provisions of Public Law 98-369 (The Competition in Contracting Act of 1984) and subsequent amendments. The US Army Research Institute for the Behavioral and Social Sciences is the Army's lead agency for the conduct of research, development, and analyses for the improvement of Army readiness and performance via research advances and applications of the behavioral and social sciences that address personnel, organization, training, and leader development issues. Programs funded under this BAA include basic research, applied research, and advanced technology development that can improve human performance and Army readiness. The funding opportunity is divided into two sections- (1) Basic Research and (2) Applied Research and Advanced Technology Development. The four major topic areas of research interest include the following: (1) Training; (2) Leader Development; (3) Team and Inter-Organizational Performance in Complex Environments; and (4) Soldier/Personnel Issues. Funding of research and development (R&D) within ARI areas of interest will be determined by funding constraints and priorities set during each budget cycle. **Open to February 5, 2018.**

### **BAA-HPW-RHX-2014-0001 Human-Centered Intelligence, Surveillance Air Force Research Lab**

This effort is an open-ended BAA soliciting innovative research concepts for the overall mission of the Human-Centered Intelligence, Surveillance, & Reconnaissance (ISR) Division (711 HPW/RHX). It is intended to generate research concepts not already defined and planned by RHX as part of its core S&T portfolio. The core RHX mission is to develop human-centered S&T that (1) enables the Air Force to better identify, locate and track humans within the ISR environment and (2) enhance the performance of ISR analysts. To accomplish this mission, the RHX core S&T portfolio is structured into three major research areas: (1) Human Signatures - develop technologies to sense and exploit human bio-signatures at the molecular and macro (anthropometric) level, (2) Human Trust and Interaction – develop technologies to improve

## ***Research Development & Grant Writing News***

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human-to-human interactions as well as human-to-machine interactions, and (3) Human Analyst Augmentation – develop technologies to enhance ISR analyst performance and to test the efficacy of newly developed ISR technologies within a simulated operational environment. The RHX mission also includes research carried over from the Airman Biosciences and Performance Program. While not directly linked to the core S&T strategic plan, there exists a unique capability resident within RHX to address critical Air Force operational and sustainment needs resulting from chemical and biological hazards. Research areas include contamination detection, hazard assessment and management, individual and collective protection, and restoration and reconstitution of operational capability. **Open to Feb. 12, 2018.**

### **Research Interests of the Air Force Office of Scientific Research**

The Air Force Office of Scientific Research (AFOSR) manages the basic research investment for the U.S. Air Force (USAF). To accomplish this task, AFOSR solicits proposals for basic research through this general Broad Agency Announcement (BAA). This BAA outlines the Air Force Defense Research Sciences Program. AFOSR invites proposals for research in many broad areas. These areas are described in detail in Section I of the BAA, Funding Opportunity Description. AFOSR plans, coordinates, and executes the Air Force Research Laboratory's (AFRL) basic research program in response to technical guidance from AFRL and requirements of the Air Force; fosters, supports, and conducts research within Air Force, university, and industry laboratories; and ensures transition of research results to support USAF needs. The focus of AFOSR is on research areas that offer significant and comprehensive benefits to our national warfighting and peacekeeping capabilities. These areas are organized and managed in five scientific directorates: Dynamical Systems and Control (RTA), Quantum & Non-Equilibrium Processes (RTB), Information, Decision, and Complex Networks (RTC), Complex materials and Devices (RTD), and Energy, Power, and Propulsion (RTE). The research activities managed within each directorate are summarized in Section I of the BAA. **Open until superseded.**

### **Air Force BAA - Innovative Techniques and Tools for the Automated Processing and Exploitation (APEX) Center**

The AFRL/RIEA branch performs Research and Development (R&D) across a broad area of Air Force Command, Control, Communications, Computers/Cyber, and Intelligence (C4I). All applicable "INTs" are investigated with emphasis on Ground Moving Target Indication (GMTI), Electronic Intelligence (ELINT), Signals Intelligence (SIGINT), Image Intelligence (IMINT), Non Traditional Intelligence, Surveillance and Reconnaissance (NTISR), and Measurement and Signature Intelligence (MASINT). The APEX Center is used to perform analysis for seedling efforts, provide baseline tool development for major programs, and to provide realistic operational systems/networks/databases for integration efforts. The APEX Center resources will be used by the Government to perform the necessary research, development, experimentation, demonstration, and conduct objective evaluations in support of emerging capabilities within the Processing and Exploitation (PEX) area. Software tools, data sets, metrics (Measures of Performance/Measures of Effectiveness), and analysis are needed for the Government to perform the vetting, maturing, and analysis of efforts related to PEX, e.g. Automatic Tracking, Activity Based Intelligence, Entity, Event & Relationship (EER) Extraction,

## *Research Development & Grant Writing News*

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Association & Resolution (A&R), Analysis & Visualization (A&V), Social Network Analysis, Network Analytics, Pattern Discovery, Scalable Algorithms, and Novelty Detection. The AFRL APEX Center is the AFRL/RI gateway into the cross-directorate PCPAD-X (Planning & Direction, Collection, Processing & Exploitation, Analysis & Production, and Dissemination eXperimentation) initiative. **Open to FY 2018.**

### **BAA-RQKD-2014-0001 Open Innovation and Collaboration Department of Defense Air Force -- Research Lab**

Open innovation is a methodology to capitalize on diverse, often non-traditional talents and insights, wherever they reside, to solve problems. Commercial industry has proven open innovation to be an effective and efficient mechanism to overcome seemingly impossible technology and/or new product barriers. AFRL has actively and successfully participated in collaborative open innovation efforts. While these experiences have demonstrated the power of open innovation in the research world, existing mechanisms do not allow AFRL to rapidly enter into contractual relationships to further refine or develop solutions that were identified. This BAA will capitalize on commercial industry experience in open innovation and the benefits already achieved by AFRL using this approach. This BAA will provide AFRL an acquisition tool with the flexibility to rapidly solicit proposals through Calls for Proposals and make awards to deliver innovative technical solutions to meet present and future compelling Air Force needs as ever-changing operational issues become known. The requirements, terms and specific deliverables of each Call for Proposals will vary depending on the nature of the challenge being addressed. It is anticipated that Call(s) for Proposals will address challenges in (or the intersection between) such as the following technology areas: Materials: - Exploiting material properties to meet unique needs - Material analysis, concept / prototype development, and scale up Manufacturing Processes that enable affordable design, production and sustainment operations Aerospace systems: - Vehicle design, control, and coordinated autonomous and/or manned operations - Power and propulsion to enable next generation systems Human Effectiveness: - Methods and techniques to enhance human performance and resiliency in challenging environments - Man – Machine teaming and coordinated activities Sensors and Sensing Systems: - Sensor and sensing system concept development, design, integration and prototyping - Data integration and exploitation. **Open to July 12, 2019.**

# Research Development & Grant Writing News

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## **Academic Research Funding Strategies, LLC** ([Page 1](#))

<http://academicresearchgrants.com/home>

ph: 979-693-0825

[LDeckard@academicresearchgrants.com](mailto:LDeckard@academicresearchgrants.com)

[mjcronan@gmail.com](mailto:mjcronan@gmail.com)

### **What We Do--**

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- Training for Staff - [Professional Development](#) for research office and sponsored projects staff

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We offer workshops on research development and grant writing for faculty and research professionals based on all published articles.

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